CALIFORNIA HIGH-SPEED TRAIN

Project Environmental Impact Report / Environmental Impact Statement

Merced to Fresno Section Project EIR/EIS

DRAFT Findings of Effect

March 2012

CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation
Federal Railroad Administration

DRAFT
Merced to Fresno Section
Findings of Effect

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California High-Speed Rail Authority and Federal Railroad Administration

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Acronyms and Abbreviations

ACHP	Advisory Council on Historic Preservation
ADRP	Archaeological Data Recovery Plan
APE	Area of Potential Effects
APN	Assessor Parcel Number
ASR	Archaeological Survey Report
ATP	Archaeological Treatment Plan
AT&SF	Atchison, Topeka & Santa Fe
Authority	California High-Speed Rail Authority
BETP	Built Environment Treatment Plan
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act of 1970
CRHR	California Register of Historical Resources
CHRS	California Historical Resource Status
CFR	Code of Federal Regulations
dBA	A-weighted decibels
DPR	Department of Parks and Recreation
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
FOE	Findings of Effect
FRA	Federal Railroad Administration
GPR	Ground Penetrating Radar
HABS	Historic American Building Survey
HAER	Historic American Engineering Record
HALS	Historic American Landscapes Survey
HASR	Historic Architectural Survey Report
HMF	Heavy Maintenance Facility
HPSR	Historic Property Survey Report
HSR	Historic Structure Report

HST	High-Speed Train
HST system	California High-Speed Train System
MOA	Memorandum of Agreement
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
NPS	National Park Service
OHP	Office of Historic Preservation
PA	Programmatic Agreement
PPV	peak particle velocity
PRC	Public Resources Code
Project	California High-Speed Train Project
SHPO	State Historic Preservation Officer
SOI	Secretary of Interior
SR	State Route
TCPs	Traditional Cultural Properties
TPS	Traction Power Substation
USDOT	U.S. Department of Transportation

1.0 Summary of Findings

This Findings of Effect (FOE) report was prepared for the Merced to Fresno Section of the California High-Speed Train (HST) Project to assist the project proponent, the California High-Speed Rail Authority (Authority), and the lead federal agency, the Federal Railroad Administration (FRA), in complying with Section 106 of the National Historic Preservation Act (NHPA), and the implementing regulations of the Advisory Council on Historic Preservation (ACHP), as these pertain to federally funded undertakings and their impacts on historic properties. This study follows the procedures set forth in the *Programmatic Agreement among the Federal Railroad Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California High-Speed Rail Authority Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the California High-Speed Train Project* (PA).[1]

The HST's Section 106 compliance activities to date include the preparation of three technical reports, all prepared in accordance with the requirements of the PA. The Historic Property Survey Report (HPSR) identifies all of the historic properties within the Area of Potential Effects (APE), including both historic built environment properties and archaeological resources. The Archaeological Survey Report (ASR) includes documentation for the identification and evaluation of archaeological resources that do not appear to be eligible for the National Register of Historic Places (NRHP) and are not exempt from evaluation (per Attachment D of the PA). The Historic Architectural Survey Report (HASR) documents historic built environment resources that are not eligible for the NRHP, but that require evaluation to fulfill Section 106 obligations and to involve the public in the Section 106 process. The HPSR, HASR, and ASR were finalized in February 2012 (Authority and FRA 2012a, b, c).

This FOE report documents the application of the Section 106 criteria for adverse effect (36 Code of Federal Regulations [CFR] 800.5) for each historic property identified within the APE for the preferred alternative. The Authority has identified the Hybrid Alternative as the preferred alternative for the north-south alignment between Merced and Fresno. Technical reports (HPSR, HASR, and ASR) prepared in support of the Final Environmental Impact Report/Environmental Impact Statement (EIR/EIS) were based on an earlier version the APE that included all three alternatives (UPRR/SR 99 Alternative, Hybrid Alternative, and BNSF Alternative).

The studies revealed that there are a total of four significant archaeological resources located within or adjacent to the archaeological APE (see Appendix A-1). Two of these were previously determined to be eligible for the NRHP (CA-MER-381/H; CA-MER-383). The other two locations have not been formally evaluated (HST-H-JL-02 and a reported burial site) and are being treated as potentially eligible under the PA (per Stipulation VI.C.1). Concurrence on this finding was issued by the California State Historic Preservation Officer (SHPO) on (date pending). A copy of the concurrence letter is included in Appendix B of this FOE report.

There are a total of nine built environment historic properties within the APE. One historic property, Forestiere Underground Gardens (Assessor Parcel Number [APN] 510-233-03 and APN 510-233-04), is listed in the NRHP and California Register of Historical Resources (CRHR), and one historic property, the Weber Avenue Overcrossing (Bridge #42C0071), was previously determined eligible for listing in the NRHP and CRHR. The remaining seven historic properties were determined eligible for listing in the NRHP and CRHR as part of this study and include: PG&E Building (APN 031-231-005), Merced Southern Pacific Company Passenger Station (APN 031-360-001, 031-361-027), KAMB/California Highway Patrol Building (APN 034-205-005), Robertson Boulevard Tree Row (No APN), 24302 Road 15 (APN 026-233-011), Roeding Park (APN 450-02-008), and Belmont Avenue Subway and Traffic Circle (Bridge #42C0072, No APN). Concurrence on these eligibility findings, along with findings of the resources in the APE that are

[1] For a copy of the PA, see the appendices for the Historic Property Survey Report (HPSR), Historic Architectural Survey Report (HASR) and Archaeological Survey Report (ASR).

not eligible for listing in the NRHP, was issued by the SHPO on (date pending). A copy of the concurrence letter is included in Appendix B of this FOE report.

This FOE report concludes that the Project would cause adverse effects to four archaeological and four built environment historic properties within the APE (see Appendices A-1 and A-2).[2]

[2] It should be noted that while the Merced to Fresno Section project area and both the built environment and archaeology APEs extend to Ventura Street in Downtown Fresno, this report (as well as the HPSR, HASR and ASR), only includes analysis to E. Amador Street in Fresno. The Fresno to Bakersfield Section technical reports (HPSR, HASR, ASR) and the FOE contain analysis of the resources south of E Amador Street to Ventura Street, including the Fresno Station. This separation avoids redundancy in the technical analysis needed for formal Section 106 compliance.

2.0 Description of the Undertaking

2.1 Preferred Alternative

The Authority has identified the Hybrid Alternative as the preferred alternative for the north-south alignment between Merced and Fresno (Figure 2-1). The Hybrid Alternative would connect to San Jose to the west along one of three wye design options. The San Jose to Merced Section Project Environmental Impact Report/ Environmental Impact Statement (EIR/EIS) will fully evaluate the east-west alignment alternatives and wye configurations, including the Ave 24 Wye, the Ave 21 Wye, and another wye design option, the State Route (SR) 152 Wye, which is not reviewed in this document. A decision regarding the preferred east-west alignment, including the preferred wye design option, will take place after circulation of the San Jose to Merced Section Project EIR/EIS; that decision will finalize the alignment and profile of the Hybrid Alternative.

The north-south alignment of the Hybrid Alternative would begin at the HST station in Downtown Merced, located on the west side of the UPRR right-of-way.[3] South of the station and leaving Downtown Merced, the alternative would be at-grade and cross under SR 99. Approaching the City of Chowchilla, the Hybrid Alternative would follow one of two routes:

- In conjunction with the Ave 24 Wye, the HST alignment would veer due south from Sandy Mush Road along a curve and would continue at-grade for 4 miles parallel to and on the west side of Road 11¾. The Hybrid Alternative would then curve to a corridor on the south side of Avenue 24 and would travel parallel for the next 4.3 miles. Along this curve, the southbound HST track would become an elevated structure for approximately 9,000 feet to cross over the Ave 24 Wye connection tracks and Ash Slough, while the northbound HST track would remain at-grade. Continuing east on the south side of Avenue 24, the HST alignment with the Ave 24 Wye would begin diverging into two sets of tracks (i.e., four tracks) beginning west of Road 17. Two tracks would travel north near Road 20½, where they would join the north-south alignment again on the west side of the BNSF corridor near Avenue 26½. The two southbound tracks would join the north-south alignment again on the west side of the BNSF corridor south of Avenue 21.

- In conjunction with the Ave 21 Wye connection, the HST alignment would transition from the west side of UPRR and SR 99 to an elevated structure as it crosses the UPRR and N Chowchilla Boulevard just north of Avenue 27, continuing on an elevated structure along the west side of and parallel to SR 99 away from the UPRR corridor while it crosses Berenda Slough. Toward the south side of Chowchilla, the alignment would cross over SR 99 north of the SR 99/SR 152 interchange near Avenue 23½ south of Chowchilla. It would continue to follow along the east side of SR 99 until reaching Avenue 21, where it would curve east and briefly run parallel to Avenue 21. Two tracks would diverge, turning north and south to connect to the north-south alignment west of Road 21. The north leg of the wye would join the north-south alignment just south of Avenue 24 and the south leg would join the north-south alignment just east of Frontage Road/Road 26 north of the community of Madera Acres.

The Hybrid Alternative would continue at-grade through agricultural areas along the west side of the BNSF corridor through the community of Madera Acres north of the City of Madera; in the vicinity of Madera Acres, the HST Project would provide a grade separation of Road 26 and Road 28, which would cross over both the existing BNSF tracks and the new HST guideway. South of Avenue 15 east of Madera, the alignment would transition toward the UPRR corridor, following the east side of the UPRR corridor near Avenue 9 south of Madera, then crossing the San Joaquin River before entering Fresno. After the

[3] For a detailed description and accompanying graphics of typical proposed infrastructure including track profiles (at-grade, retained fill, and elevated), overcrossings/undercrossings, station designs, and utility components, see Chapter 2 of the EIR/EIS (Authority and FRA 2012a).

alternative crosses the San Joaquin River, it would rise over the UPRR railway on an elevated guideway, supported by straddle bents, before crossing over the existing Herndon Avenue and again descending into an at-grade profile and continuing west of and parallel to the UPRR right-of-way. Traveling south from Golden State Boulevard at-grade, the alternative would cross under the reconstructed Ashlan Avenue and Clinton Avenue overhead structures. Advancing south from Clinton Avenue between Clinton Avenue and Belmont Avenue, the HST guideway would run at-grade adjacent to the western boundary of the UPRR right-of-way. The HST guideway would descend in a retained cut to pass under the San Joaquin Valley Railroad spur line and SR 180, transition back to at-grade before Stanislaus Street, and continue to be at-grade into the station in Downtown Fresno. The Mariposa Street Station is the preferred HST station location in Fresno.

After the San Joaquin River crossing, the HST alignment would require realignment (a mostly westward shift) of Golden State Boulevard and of a portion of SR 99 to create right-of-way adjacent to the UPRR railroad that would not preclude future expansion of these roadways.

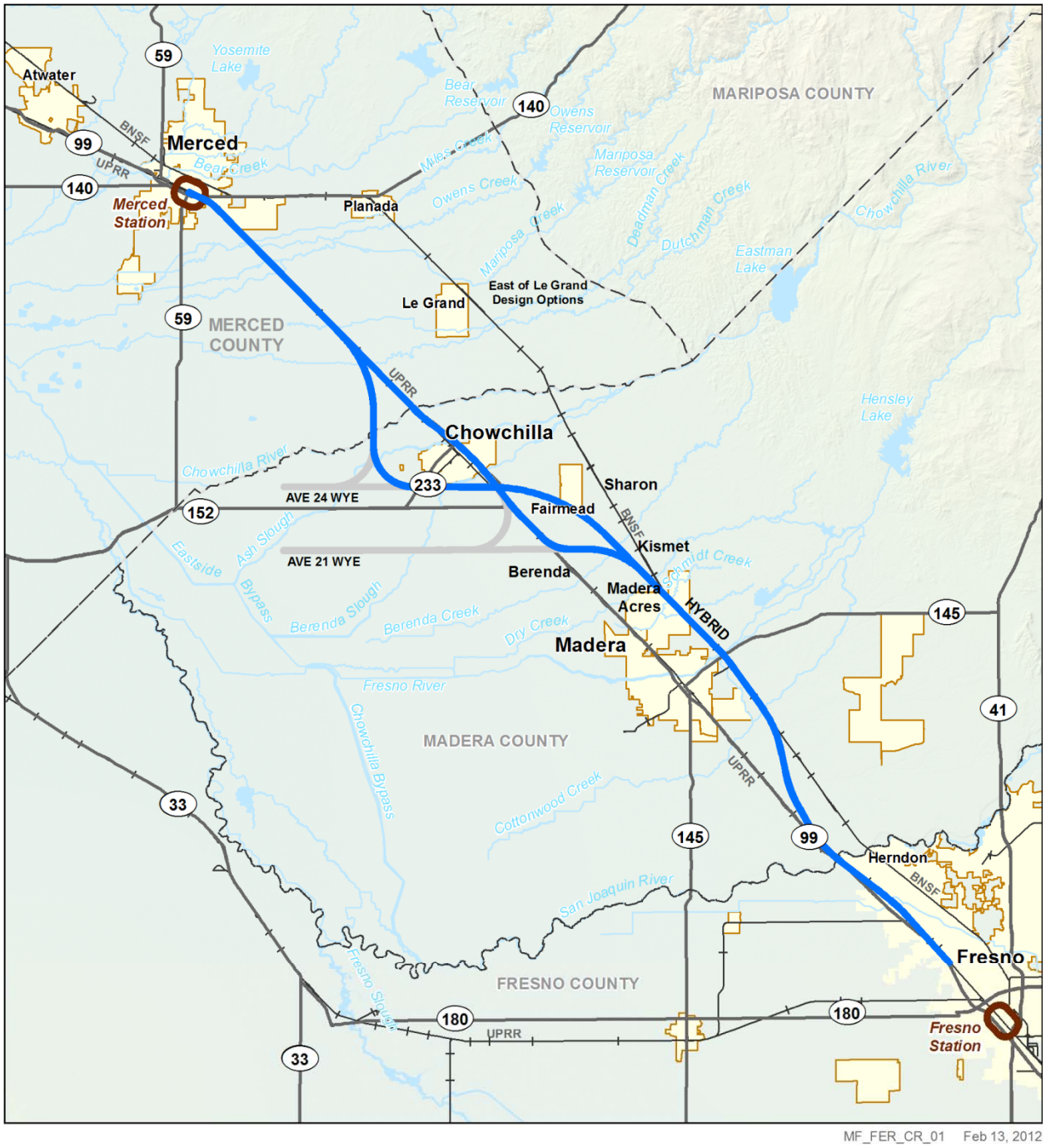

Figure 2-1
Merced to Fresno Section High-Speed Rail Project – Preferred Alternative

3.0 Consulting Parties, Public Participation

Consultation has been ongoing over the course of the project in accordance with the National Environmental Policy Act (NEPA) and Section 106 procedures and following the general framework for consultation established in the PA (Stipulation V, Part B). Full information on the meetings and consultation that have been undertaken over the past 3 years can be found in Section 3.17: Cultural and Paleontological Resources of the EIR/EIS and Section 7.0: Public and Agency Involvement of the EIR/EIS, the HPSR, the HASR, and the ASR. Consultation specifically about effects and mitigation is currently ongoing with federal, state, and local government agencies, Native Americans, and other interested groups. Three local jurisdictions have requested consulting party status under Section 106 for the development of the project-specific Memorandum of Agreement (MOA), including the City of Fresno, Fresno County, and the City of Madera. The Bureau of Reclamation has requested to be a consulting party for any locations where the HST overlaps with its jurisdiction.

Consulting parties will have the opportunity to review and comment on the FOE report and participate in the development of measures to avoid, minimize, and mitigate adverse effects to historic properties.

For a copy of all tribal consultation, interested party, consulting party letters, and responses, see Appendix B in the HPSR, HASR, and ASR.

4.0 Description of Historic Properties, Application of Criteria of Adverse Effect, and Conditions Proposed

This section contains: 1) the description of the 15 historic properties within the archaeological and built environment APEs for the Project; 2) the application of the criteria of adverse effect for each property; and 3) a description of the proposed mitigation measures for those historic properties that would be adversely affected (Table 4-1). "Historic properties" are buildings, structures, objects, sites, districts, or landscapes that are listed in or have been determined eligible for listing in the NRHP.

4.1 Methodology

4.1.1 Criteria of Adverse Effect

The NHPA Section 106 regulations state that if there are historic properties in the APE which may be affected by a federal undertaking, the agency official will assess adverse effects, if any, in accordance with the Criteria of Adverse Effect described in 36 CFR 800.5, "Assessment of adverse effects." An "adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association." (36 CFR 800.5(a)(i)). Effects can be direct, indirect, or cumulative. Table 4-1 gives examples of adverse effects on historic properties.

Table 4-1
Examples of Adverse Effects Provided in 36 CFR 800.5(a)(2)

Adverse effects on historic properties include, but are not limited to:	
(i)	Physical destruction of or damage to all or part of the property;
(ii)	Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the Secretary of Interior's (SOI's) standards for the treatment of historic properties (36 CFR part 68) and applicable guidelines;
(iii)	Removal of the property from its historic location;
(iv)	Change of the character of the property's use or of physical features within the property's setting that contributes to its historic significance;
(v)	Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;
(vi)	Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and
(vii)	Transfer, lease, or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

Of the seven types of effects listed above, 36 CFR 800.5(a)(2)(vi) and (vii) are not applicable to the Project because the Project would not result in the neglect of a historic property or the transfer, lease, or sale of property out of Federal ownership or control. Since (vi) and (vii) are not applicable in this instance, those two examples have been excluded from the effects assessments in Sections 4.1 and 4.2.

4.1.2 Conditions Proposed to Avoid, Minimize, or Mitigate Adverse Effects

Measures to avoid or minimize adverse effects include steps taken in both the design and construction phases of the Project. Avoidance alternatives implemented during the design and construction phases occur by excluding project components, characteristics, or construction activities that can adversely affect historic properties. Minimization measures implemented at both the design and construction phases would lessen the degree of adverse effect or impacts on historic properties. Measures to mitigate adverse effects on historic properties are developed when adverse effects cannot be avoided or minimized.

Also pursuant to the PA, measures to avoid, minimize, or mitigate adverse effects presented in this FOE report will be included in the Built Environment Treatment Plan (BETP) and an Archaeological Treatment Plan (ATP) and refined accordingly for each particular historic property. Detailed direction for implementation of the avoidance, minimization, and mitigation measures will also be presented in the BETP and the ATP. These treatment plan documents will set forth applicable property-specific measures in consultation with the SHPO, appropriate agencies, and other MOA signatories. The concerns of the consulting parties will also be considered in determining the measures to be implemented. Most measures/treatments will be implemented prior to the commencement of construction activities; however, depending on the nature of the selected measures, some may not be completed until after the undertaking is completed.

4.1.3 Project-wide Avoidance Measures

Effects to historic properties can occur during construction activities and during operation of the HST System. Construction and operational noise have the potential to cause indirect adverse effects to historic properties that have an inherent quiet quality that is part of a property's historic character and significance. Examples of property types that are sensitive to noise include (but are not limited to) residences, parks, libraries, museums, and schools. As a precaution, the Project would develop measures to avoid adverse effects that could result from construction noises such as impact pile-driving, jack hammering, and truck loading and operations. Measures implemented to avoid adverse effects from construction noise would include alternative techniques, such as the use of low-noise emission equipment and noise-deadening equipment for trucks. These avoidance measures will prevent potential noise impacts from construction throughout the project area.

Steps taken to address potential adverse effects to historic properties include developing methods to avoid construction vibration effects. Potential structural damage or alteration of historic properties from construction vibration is anticipated only from impact pile-driving at very close distances to buildings. If piling is more than 25 to 50 feet from buildings, or if alternative methods such as push piling or auger piling can be used, damage from construction vibration would not be expected to occur. Because this impact pile-driving could cause adverse effects or substantial adverse changes, alternative construction methods causing less than 0.12 peak particle velocity of 1 inch per second (0.12 PPV in/sec) measured at the receptor would be developed for construction activities near historic properties if they are determined to be extremely susceptible to vibration damage. The development of alternative construction methods at the location of the historic properties would avoid adverse vibration effects on historic properties.

The following sections present the effects of the Project on significant cultural resources, and provide potential measures to avoid, minimize, and mitigate the adverse effects identified.

4.2 Archaeological Historic Properties

There are four historic properties that are significant archaeological properties within the Project's APE. Two archaeological resources, CA-MER-381/H and CA-MER-383, have been previously determined eligible for the NRHP with SHPO concurrence (Mellon 2003). Both of these resources are situated immediately adjacent to the Project APE. Due to a lack of legal access to the property where the resources are

located, no archaeological testing has been undertaken in these locations as part of the current Project to ascertain their horizontal or vertical limits. Although there is insufficient information to determine their horizontal extent, it is considered likely that they extend into the APE and they are therefore included in this FOE document.

Based upon archival investigations, Native American consultation, and pedestrian survey, two additional locations (HST-H-JL-02 and a reported burial ground) have been identified within or immediately adjacent to the Project's APE. No archaeological testing was undertaken at these locations. Under Stipulation VI.C.1 of the PA, "known archaeological properties that cannot be evaluated prior to approval of an undertaking will be presumed NRHP eligible." Under that Stipulation, these locations are also being treated as potentially eligible archaeological properties (Authority and FRA 2011a). All of the resources are considered potentially eligible under NRHP Criterion D – have yielded, or may be likely to yield, information important in prehistory or history. The SHPO concurred on the potential eligibility of these resources (Appendix B).

These two locations will be fully investigated as part of future implementation of the Project, as allowable under Stipulation VI. E of the PA. This section states that "In accordance with 36 CFR 800.4(b)(2), phased identification may occur in situations where identification of historic properties cannot be completed. In these cases, subsequent MOAs will provide a provision for the development and implementation of a post-review identification and evaluation effort as applicable to the undertaking." The MOA and ATP for the Merced to Fresno Section will lay out the plans and procedures for implementing this phased identification, which will allow for full testing and evaluation of HST-H-JL-02 and the reported burial ground, prior to construction.

All four of the archaeological historic properties are summarized in Table 4-2 and the location of these properties in relation to the Project is provided in Appendix A-1.

Table 4-2
Archaeological Resources Treated as Historic Properties

Resource	Description	Eligibility for NRHP	Reference(s)
P-24-001676, CA-MER-381/H	Prehistoric artifact deposit/ Historic remains of the town of Athlone	Eligible; portion in the APE treated as eligible under the PA	Becker 2003a; Bischoff and Majewski 2002
P-24-001686, CA-MER-383	Prehistoric habitation site with burials	Eligible; portion in the APE treated as eligible under the PA	Johnston 2001; Becker 2003b
HST-H-JL-02	Historic artifact scatter	Potentially eligible under the PA	Authority and FRA 2011a
Reported burial ground	Potential prehistoric burial	Potentially eligible under the PA	Authority and FRA 2011a

Due to lack of legal access, approximately 80 percent of the project APE remains unsurveyed. Additional survey, Native American consultation, and geoarchaeological investigations may identify other archaeological resources in the Project APE that would qualify as historic properties. Once access to all of these locations has been obtained, additional survey and testing would be undertaken to confirm the presence or absence of archaeological sites and their NRHP and/or CRHR eligibility, in consultation with the SHPO and other consulting parties, and in accordance with the terms of the PA (Stipulation VI. E, Phased Identification). If any new significant archaeological resources are found during future testing, these would be assessed in accordance with Stipulation VII (Assessment of Adverse Effects) of the PA. Any adverse effects would be addressed in accordance with Stipulation VIII (Treatment of Historic Properties) of the PA.

4.2.1 CA-MER-381/H

Property Description

Site P-24-001676 (CA-MER-381/H) includes a prehistoric component and remnants of the town of Athlone. [redacted] The landowner denied access to this property during the survey (Authority and FRA 2012d). Previous investigations at this site (Bischoff and Majewski 2002; Becker 2003a; U.S. Department of Transportation et al. 2005) indicate that although the area is disturbed, the discovery of in-situ artifacts up to 6.6 feet below the present-day ground surface suggests the site retains considerable data potential. [redacted] It is presumed that this site extends into the HST APE. The U.S. Department of Transportation (USDOT) and others (2005) recommended that site CA-MER-381/H is eligible, under Criterion D, for NRHP/CRHR listing and received SHPO concurrence with that recommendation (Mellon 2003).

Application of Criteria of Adverse Effect

Due to its close proximity to the Project, it is presumed that this site extends into the APE. The APE in this area is approximately 200 feet in width. Within the area surrounding the site, an at-grade track profile would be maintained slightly above the existing ground surface on a bed of compacted soil and ballast, but always at least 4.5 feet above the prevailing ground surface. Catenary poles would be erected at set intervals on both sides of the rail bed (200 feet along straight sections and 70 feet in tight-turn areas). Walkways, underground utility conduits, open drainage swales, and a surrounding security fence would be constructed beyond the line of catenary poles and track bed.

In accordance with the terms presented in the MOA and the ATP, once access to this site has been obtained, full archaeological investigations would be undertaken to clearly define the horizontal and vertical limits, reassess its eligibility, and then, through consultation, initiate mitigation measures as appropriate. If the site extends into the APE, there would be a direct adverse effect to CA-MER-381/H based on 36 CFR 800.5(a) (2)(i), destruction of, or damage to, part of the property; the remaining Criteria (ii)-(v) are not applicable (Table 4-3). For the purposes of this Project, it is assumed that the site would be impacted by construction of the HST.

Table 4-3
Application of Criteria of Adverse Effect for CA-MEr-381/H

Examples of Adverse Effects, CFR 800.5(a)(2): Adverse effects on historic properties include, but are not limited to:	**Evaluation**
(i) Physical destruction of or damage to all or part of the property;	Compaction through the application of ballast and berm construction and excavation for subsurface utilities, drainageways, or fencing may all cause the physical destruction of or damage to this archaeological resource.
(ii) Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the SOI's standards for the treatment of historic properties (36 CFR part 68) and applicable guidelines;	Criterion does not apply. The resource would not undergo any alterations due to restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access.

Examples of Adverse Effects, CFR 800.5(a)(2): Adverse effects on historic properties include, but are not limited to:	**Evaluation**
(iii) Removal of the property from its historic location;	Criterion does not apply. The resource would not be removed from its historic location.
(iv) Change of the character of the property's use or of physical features within the property's setting that contributes to its historic significance;	Criterion does not apply. Change of the character of the property's use or of physical features would not affect the archaeological resource.
(v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;	Criterion does not apply. The introduction of visual, atmospheric or audible elements would not affect the archaeological resource.

4.2.2 CA-MER-383

Property Description

The Wilson Site, P-24-001686 (CA-MER-383), is a large prehistoric habitation site with Native American burials that may encroach into the APE. [redacted] No surface evidence of the site was observed during the survey of the APE in 2010. In the late 1970s, an archaeological excavation at the site recovered multiple burials; although orchard development in the area may have removed much of the surface portion of the site, intact components were found to extend to at least 3.28 feet below surface. Work done for Caltrans in 2001 included the excavation of multiple trenches and test units in and around the Wilson Site [redacted] Because of the presence of human remains and its data potential, site CA-MER-383 is eligible for listing in the NRHP and the CRHR. The site was evaluated during the Plainsburg/Arboleda Freeway Project Environmental Assessment (USDOT et al. 2005), found to be eligible under NRHP Criterion D, and received SHPO concurrence with that finding (Mellon 2003).

Application of Criteria of Adverse Effect

Due to its close proximity to the Project, it is presumed that this site extends into the APE. The APE in this area ranges between 150 feet and 250 feet. As with CA-MER-381H, an at-grade track profile would be maintained in the vicinity of CA-MER-383. As the name implies, the track profile would be maintained slightly above the existing ground surface on a bed of compacted soil and ballast, but always at least 4.5 feet above the prevailing ground surface. Catenary poles would be erected at set intervals on both sides of the rail bed (200 feet along straight sections and 70 feet in tight-turn areas). Walkways, underground utility conduits, open drainage swales, and a surrounding security fence would be constructed beyond the line of catenary poles and track bed.

If the site extends into the APE, there would be an adverse effect to CA-MER-383 based on 36 CFR 800.5(a)(2)(i) destruction of, or damage to, part of the property. The remaining Criteria (ii)-(v) do not apply (Table 4-4).

Table 4-4
Application of Criteria of Adverse Effect for CA-MER-383

Examples of Adverse Effects, CFR 800.5(a)(2): Adverse effects on historic properties include, but are not limited to:	**Evaluation**
(i) Physical destruction of or damage to all or part of the property;	Compaction through the application of ballast and berm construction and excavation for subsurface utilities, drainageways, or fencing may all cause the physical destruction of or damage to this archaeological resource.
(ii) Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the SOI's standards for the treatment of historic properties (36 CFR part 68) and applicable guidelines;	Criterion does not apply. The archaeological resource would not undergo any alterations due to restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access.
(iii) Removal of the property from its historic location;	Criterion does not apply.
(iv) Change of the character of the property's use or of physical features within the property's setting that contributes to its historic significance;	Criterion does not apply. Change of the character of the property's use or of physical features would not affect the archaeological resource.
(v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;	Criterion does not apply. The introduction of visual, atmospheric or audible elements would not affect the archaeological resource.

4.2.3 HST-H-JL-02

Property Description

The site consists of a late 19th to mid-20th-century trash scatter over a 230-foot by 230- foot area. The area has been graded, and includes bare ground and areas containing moderately dense vegetation. There are large eucalyptus trees and local grasses. The site is within the APE for the preferred alternative. Disturbances within the site consist of construction activities that included the mechanical grading or clearing, as well as the stockpiling of large quantities of timbers. Household appliances were also present, but whether they represent elements of a domestic site or later dumping is currently unknown. Historic artifacts documented within the site consist of kitchen, household, building, and consumer items. These are composed of ceramic, glass, and concrete items. Ceramic items include electrical insulators and miscellaneous ceramic fragments, including ironstone and porcelain and common building brick fragments. Also observed within the site boundaries are colorless, amber, cobalt blue, and milk glass jar and bottle that are complete or fragmentary. The site also contains numerous concrete and asphalt fragments that are associated with structures of unknown purpose. No features were observed. The observed artifacts provide a general timeframe of very late 19th to mid-20th-century; the sample is indicative of a domestic site. No historical association for these materials has, as yet, been made and the possibility of the presence of subsurface features such as privies and/or wells is unknown. The disturbed context in which these artifacts were observed makes it difficult to assess what they represent, as well as their potential significance. The variety and quantity of artifacts found on the ground surface indicate a domestic site. Intact features or additional deposits could be located beneath a large pile of bridge timbers. Under the PA, the site is treated as NRHP-eligible.

Application of Criteria of Adverse Effect

The Project APE lies adjacent to the documented limits of the site, which may extend into the APE. The APE in this area averages 100 feet in width and the site sits on the south bank of the Fresno River; either an elevated structure or retained fill may be constructed in the site area. The retained fill profile would contain almost all the elements included in an at-grade profile (rail bed, tracks, catenary poles, walkways, underground utilities) within a package of fill material placed within the confines of two retaining walls that define the limits of the HST right-of-way. Elevated profiles would be employed in urban areas and major river crossings. The tracks would be placed on an overhead structure supported by piers or concrete columns. Piers or column structures would measure 10 feet in circumference.

If HST-H-JL-02 extends into the APE, construction of either retained fill or an elevated structure would be an adverse effect based on 36 CFR 800.5(a)(2)(i) destruction of, or damage to, part of the property. The remaining Criteria (ii)-(v) do not apply (Table 4-5).

Table 4-5
Application of Criteria of Adverse Effect for HST–H-JL-02

Examples of Adverse Effects, CFR 800.5(a)(2): Adverse effects on historic properties include, but are not limited to:	**Evaluation**
(i) Physical destruction of or damage to all or part of the property;	Construction of retaining walls, introduction of fill, catenary poles, pier or column structures, walkways and drainageways may all cause the physical destruction of or damage to this archaeological resource.
(ii) Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the SOI's standards for the treatment of historic properties (36 CFR part 68) and applicable guidelines;	Criterion does not apply. The archaeological resource would not undergo any alterations due to restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access.
(iii) Removal of the property from its historic location;	Criterion does not apply.
(iv) Change of the character of the property's use or of physical features within the property's setting that contributes to its historic significance;	Criterion does not apply. Change of the character of the property's use or of physical features would not affect the archaeological resource.
(v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;	Criterion does not apply. The introduction of visual, atmospheric or audible elements would not affect the archaeological resource.

4.2.4 Undocumented Human Burials

The ATP would contain a detailed plan for the treatment of undocumented human remains. Any undocumented human burials would be treated in accordance with Stipulation XIII of the PA, the Native American Graves Protection and Repatriation Act (NAGPRA), and the California Native American Graves Protection and Repatriation Act (California Health &Safety Code Section 8010 et seq.).

Property Description

According to oral accounts from a member of the Dumna Wo-Wah Tribe, [redacted]. Although specific locations for burials could not be determined, according to the tribal member, [redacted]. According to the Dumna Wo-Wah tribal member, some of those remains have been repatriated but, unfortunately, there is no clear record of where within the property they were located. The area is currently paved, preventing investigation of the area. Therefore, while there is a distinct possibility that human remains would be encountered in the Project APE at that location, confirmation is lacking. The area is considered archaeologically sensitive and is being treated as potentially eligible under the PA.

Application of Criteria of Adverse Effect

The width of the APE in this area varies between 900 feet and 1,200 feet. Proposed construction would be on an elevated structure, which would require placing 10-ft diameter concrete piers or columns deep into the ground. If the Project crosses the reported site, there would be an adverse effect to the resource based on 36 CFR 800.5(a)(2)(i) destruction of, or damage to, part of the property. The remaining criteria (ii)-(v) do not apply (Table 4-6).

Table 4-6
Application of Criteria of Adverse Effect for Potential Area of Human Remains

Examples of Adverse Effects, CFR 800.5(a)(2): Adverse effects on historic properties include, but are not limited to:	**Evaluation**
(i) Physical destruction of or damage to all or part of the property;	Construction of an elevated structure on piers or columns may cause physical destruction or damage to all or part of this potential archaeological resource.
(ii) Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the SOI's standards for the treatment of historic properties (36 CFR part 68) and applicable guidelines;	Criterion does not apply. The archaeological resource would not undergo any alterations due to restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access.
(iii) Removal of the property from its historic location;	Criterion does not apply.
(iv) Change of the character of the property's use or of physical features within the property's setting that contributes to its historic significance;	Criterion does not apply. Change of the character of the property's use or of physical features would not affect the archaeological resource.
(v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;	Criterion does not apply. The introduction of visual, atmospheric or audible elements would not affect the archaeological resource.

4.3 Conditions Proposed to Avoid, Minimize, or Mitigate Adverse Effects

The Project would cause adverse effects to each of the four archaeological resources if the sites extend into the APE. The HST project has considered avoidance and minimization measures consistent with the

2005 Statewide and 2008 Bay Area to Central Valley Program EIR/EIS commitments and the 2012 California High-Speed Train Project EIR/EIS Merced to Fresno Section, as described below. There are several regulatory requirements that must be followed during construction of any federal- and state-funded project, including NEPA and Section 106. In addition, the following options for treatment of adverse effects are available to mitigate impacts that cannot be avoided or minimized. Cultural resources treatment measures can occur prior to, during, and following construction. Protective measures, such as archaeological site capping and recordation of resources, would take place prior to construction; other protective measures such as monitoring for archaeological resources during ground-disturbing activities would occur during construction. Efforts that can be included in the mitigation plan that take place after construction may include interpretive programs, including displays, interpretive signage, etc.

The PA established the framework for the development and implementation of measures to avoid, minimize, and/or mitigate adverse effects on historic properties caused by the HST System, in compliance with Section 106 and NEPA. The PA also established that an MOA would be prepared for the Merced to Fresno Section, detailing the HST project commitments to implement these avoidance, minimization, and mitigation measures. The project-specific MOA includes input from signatories, consulting and concurring parties, and other interested members of the public who provided input in the development of appropriate treatment measures.

Per the PA, an ATP will be prepared. The ATP will provide a suite of options for the treatment of eligible or potentially eligible archaeological resources in the APE. First, the ATP will provide a detailed description of the documented archaeological resources of concern in or adjacent to the APE and the research potential of each of the individual resources. The document will also include the measures to be taken to survey all portions of the APE that have not previously been surveyed and the steps to be taken to evaluate their NRHP and CRHR eligibility. Specific treatment plans and mitigation measures for historic properties (Section 106) adversely affected by the project will also be included. The ATP will focus on the treatment of known historic properties and will provide guidance in the event of unanticipated discoveries. The ATP will also outline the provisions of the other mitigation measures to be carried out for this project, such as responses to inadvertent damage, or interpretation mitigation (see mitigation measures below). Protocols for the treatment of human remains, guidance for the participation of Native American monitors, and conditions for the ownership and curation of archaeological remains will also be presented in detail in the ATP.

4.3.1 Avoidance Measures

As described in Section 4.1 above, the precise relationship of the three archaeological sites and one purported burial ground to the APE is currently unknown, but they are treated as if they may extend into the APE and consequently affected by the Project. Avoidance of these resources is the preferred solution, but in order to do so it will be necessary to determine the horizontal and vertical limits of the sites in relation to the APE. Extended Phase I testing at these site locations, to be undertaken by the design/build team in accordance with the phased identification process in the PA (Stipulation VI E.) and in accordance with 36 CFR 800.4(b)(2), will provide the required information on these four resources.

4.3.2 Identification Level Archaeological Testing

As the design-build phase of the project moves forward, the archaeological consultant to the contractor would conduct Extended Phase I testing at each of the four locations described in Section 4.1 above, once legal access to those properties has been secured. The ATP will provide a detailed description of what the Extended Phase I testing consists of and stipulates that the archaeological consultant meets the SOI's Standards for Archaeology. Once the horizontal and vertical limits of the sites in relation to the APE have been established, the need to evaluate design changes to avoid any of these resources can be established and the design team can analyze how to best re-design the project to avoid the resource(s). If avoidance is not an option, minimization and/or mitigation measures will be developed and undertaken.

4.3.3 Minimization Measures

Measures to minimize effects on eligible archaeological resources will be taken both prior to and during construction. They can include, but are not limited to, re-design, as well as contractor education and construction monitoring, as described below. Project re-design would under most circumstances take place prior to construction. Educational measures are designed to sensitize selected construction personnel to the importance of archaeological resources, how to identify them in the field, and what steps need to be taken when artifacts or archaeological features are encountered during construction. This education will take place prior to construction. Archaeological monitoring is a minimization measure to assure that damage to an unrecorded or unknown archaeological resource that is encountered during construction is kept to a minimum.

4.3.3.1 Redesign Project

Once the vertical and horizontal limits of an eligible archaeological resource have been established, project impacts will be reviewed and the project designs in that specific location will be examined to see if it would be possible to avoid the resource. For example, if a site is uncovered, an avoidance option may be to bridge that location rather than constructing at-grade. If complete avoidance is not possible, minimization of impacts would be analyzed and design changes implemented to the extent possible to avoid unnecessary impacts to the archaeological site. For example, if a site is uncovered, efforts should be made to see if the project could be shifted to perhaps only impact a small portion of the site, rather than crossing through the center. Mitigation of the remaining impacts to the resource will be required.

Of course, project re-design can be costly and time-consuming, and may not be prudent or feasible in certain locations due to engineering as well as environmental factors. However, avoidance and minimization should be explored as a first step in all cases.

4.3.3.2 Conduct Archaeological Training

Prior to ground-disturbing activities, a qualified professional archaeologist, who meets the SOI's Standards for Archaeology (36 CFR Part 61), will develop a training program and printed material to be presented to construction personnel. The purpose of this training and accompanying materials will be to familiarize construction personnel with the relevant legal (Section 106/NEPA/CEQA) context for cultural resources of the project and with the types of cultural sites, features, and artifacts that could be uncovered during construction activities. These training sessions will be conducted prior to commencing construction within discrete portions of the Project and as needed, as construction personnel crews and supervisors may change.

4.3.3.3 Conduct Archaeological Monitoring in Proximity to Identified Sites or Areas of Sensitivity

Ground-disturbing activities that have the potential to affect archaeological remains may occur in areas that have been identified as either the location of a known archaeological site or known to be sensitive for the presence of buried cultural resources. In accordance with Stipulation XI (Discoveries, Unanticipated Adverse Effects, Unanticipated Damage) of the PA, the FRA and the Authority will ensure that measures to be completed in the event of a discovery, unanticipated adverse effect, or damage to a historic property will be included in the ATP. The FRA and the Authority will retain the services of a qualified archaeological monitor who will be present during all ground-disturbing construction activities occurring in native sediments/soils. In the event that cultural resources are exposed during construction, the monitor will be empowered to temporarily halt activities in the immediate vicinity of the discovery while it is evaluated for significance. If the archaeologist determines that the cultural resources exposed are unique archaeological resources as defined by Section 21083.2 of CEQA, then the archaeologist will conduct additional excavations to avoid impacts on these resources by the Project. If they are not "unique," then no further efforts would be required. Unique cultural resources will be determined based

on the criteria set forth in Section 21083.2 of CEQA. In accordance with the PA, the FRA and the Authority will seek Native American input and consultation.

4.3.3.4 Stop Work in the Event of an Archaeological Discovery

If any construction personnel, personnel from the contractor's Archaeological Team, or Native American archaeological monitors identify potential archaeological features (e.g. foundations, wells, privies, fire hearths, storage pits) or archaeological materials (e.g. historic or prehistoric artifacts) that require further investigation and evaluation, a Stop Work order will be issued to protect those potentially significant finds during the discovery and evaluation process. If any find is determined to be significant, the QI and the PI will meet to determine the appropriate avoidance, minimization, or mitigation measures in conjunction with the SHPO. Work may proceed on other parts of the project site while assessment and treatment/mitigation for archaeological resources is being conducted. The ATP will provide a fully detailed description of the steps and procedures related to a Stop Work order and the evaluation of any unanticipated discoveries on the work site.

4.3.4 Mitigation Measures

4.3.4.1 Intentional Site Burial for Preservation In-Place

If project engineering concludes that avoidance is not feasible, a process to determine whether the site can be preserved through intentional site burial will be considered. When complete avoidance is not possible, preservation in-place is the preferred form of mitigation, pursuant to Public Resources Code (PRC) 15126.4(b)(3)(A). To intentionally bury a site, it is necessary to conduct test excavations to determine the vertical and horizontal extent of the identified resources discovered as planning proceeds or through accidental discovery. If excavations have not yet been conducted for the purposes of evaluating the site for eligibility in accordance with the PA, the FRA and the Authority will contract with a qualified archaeologist to conduct a formal excavation of the site to delineate the site boundaries and determine the site's eligibility for the CRHR or NRHP. The contracted archaeologist will, in addition to the formal delineation of the site boundaries, prepare and implement a design plan to dictate the conditions of the intentional site burial according to the recommendations discussed in the National Park Service (NPS) Technical Brief Number 5, *Intentional Site Burial: A Technique to Protect Against Natural or Mechanical Loss* (Thorne 1989). Among the requirements of an effective capping, the mechanical process of burying the site must be designed in a manner that will ensure that the site matrix is protected during the placement process and during the operation of the HST. The ATP will provide the necessary guidance for determining under what conditions intentional site burial is appropriate and how preservation in place is to be successfully achieved. FRA and the Authority will seek input from the consulting parties in the evaluation and implementation of this mitigation measure.

4.3.4.2 Archaeological Data Recovery Program

If through consultation it is determined that a significant archaeological resource is present in the APE that could be adversely affected by the Project and that the site cannot be completely avoided, implementation of an Archaeological Data Recovery Plan (ADRP) will be required. The ATP will contain the broad programmatic steps that will be taken in the event that a Data Recovery investigation is required. If a significant archaeological site requires mitigation, an ADRP will be developed for that specific research by the archaeological consultant for the contractor. The site-specific ADRP will identify the scientific/historical research questions that are applicable to the expected resource, the data classes the resource is expected to possess, and how the expected data classes will address the applicable research questions. All significant cultural materials recovered will be, as necessary and according to the Data Recovery work plan, subject to scientific analysis, professional museum curation, and documentation according to current professional standards as determined in the Project's MOA. FRA and the Authority will seek input from the consulting parties in the evaluation and implementation of this

mitigation measure. Any ADRP would require close consultation with the SHPO and the consulting parties.

4.4 Built Environment Historic Properties

Of the nine built environment historic properties subject to analyses, seven were identified in previous studies, and of these, one is listed in the NRHP, one was determined eligible for the NRHP, and five were recommended eligible for listing in the NRHP. Two properties were identified and recommended eligible as part of this study. Most of the previous evaluations and nominations were completed between the 1970s and early 1980s, at a time when there was little standardization of the evaluation process. As a result, the historic properties that were found to be significant often lacked clear and concise explanation of their historical importance, and few of these previously evaluated properties included references to specific NRHP criteria — Criteria A, B, C, and D. Additionally, evaluation of the property's overall historic integrity was often not supplied or was overlooked; dates for the period of significance were not provided; and many do not identify character-defining features. Thus, additional evaluation and description information are provided in the HPSR and in this section to facilitate completion of this effects analysis.

Three of the built environment historic properties were found to be significant for both their association with historic events or patterns in history (Criterion A) and for their architectural merit or as the work of a master (Criterion C). Five properties were found to be historically significant solely under Criterion C and one property was found to be significant under Criterion C and under D for its information potential. Table 4-7 provides a summary of the historic properties analyzed in this report, followed by a brief explanation of the significance of each historic property and the characteristics that contribute to that significance. Representative photographs of these historic properties follow the explanations. The location of these properties in relation to the Project, as indicated with map reference number listed in Table 4-7, is shown in Figures 4-1, 4-2, and 4-3 and in Appendix A-2.

The analysis for each property below provides the relevant types of effects listed in 36 CFR 800.5(a)(2). As noted, two of the seven types of effects listed under 36 CFR 800.5(a)(2) are not applicable because the Project would not result in the neglect of a historic property (vi) or the transfer, lease, or sale of property out of Federal ownership or control (vii).

Table 4-7
Summary Table of Built Environment Historic Properties and Evaluation of Adverse Effects

Map Ref No.	APN	Name	Address	City	County	Year Built	CHRS Status Code	NRHP Criteria	Effect Determination
1	031-231-005	PG&E Building	560 West 15th Street	Merced	Merced	ca. 1915	3S	C	No Adverse Effect
2	031-360-001 031-360-027	Merced Southern Pacific Railroad Station	740 West 16th Street	Merced	Merced	1926	3S	A, C	No Adverse Effect
3	034-205-005	KAMB/California Highway Patrol	90 East 16th Street	Merced	Merced	1933	3S	C	No Adverse Effect
4	026-233-011		24302 Road 15	Chowchilla	Madera	ca. 1920	3S	C	No Adverse Effect
5	No APN	Robertson Boulevard Tree Row	Robertson Boulevard	Chowchilla	Madera	1912-1913	3S	A, C	Adverse Effect
6	510-233-03 510-233-04	Forestiere Underground Gardens	5021 West Shaw Avenue	Fresno	Fresno	1906-1946	1S	C, D	No Adverse Effect
7	450-020-08	Roeding Park	890 West Belmont Avenue	Fresno	Fresno	1904	3D	A, C	Adverse Effect
8	No APN	Weber Avenue Overcrossing (Bridge 42C0071)	Weber Avenue at Thorne Avenue	Fresno	Fresno	1953	2S2	C	Adverse Effect
9	No APN	Belmont Avenue Subway and Traffic Circle	Belmont Avenue	Fresno	Fresno	1932	3S	C	Adverse Effect

CHRS = California Historical Resource Status Code (see Appendix C for a key to the codes)
APN = Assessor's Parcel Number

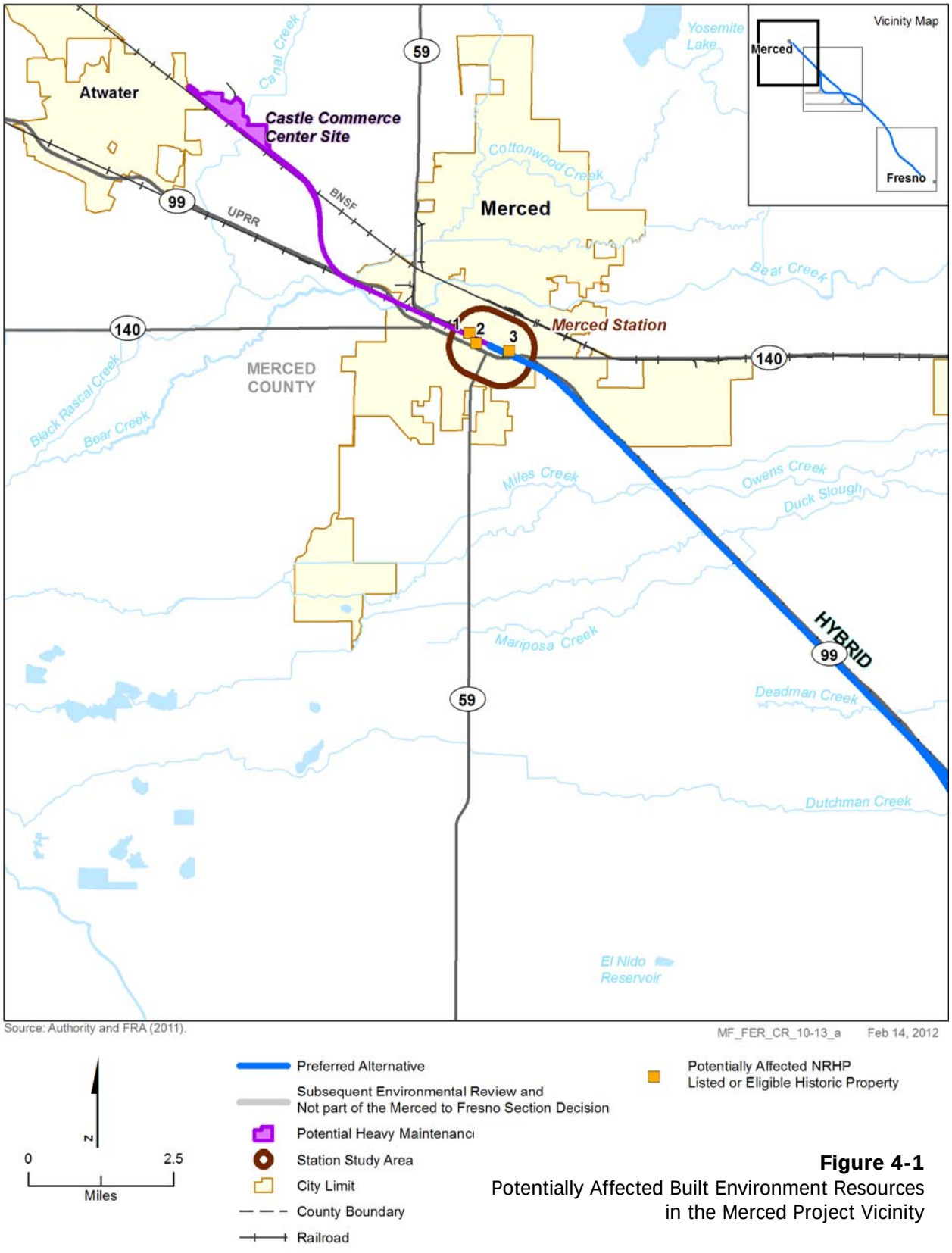

Figure 4-1
Potentially Affected Built Environment Resources in the Merced Project Vicinity

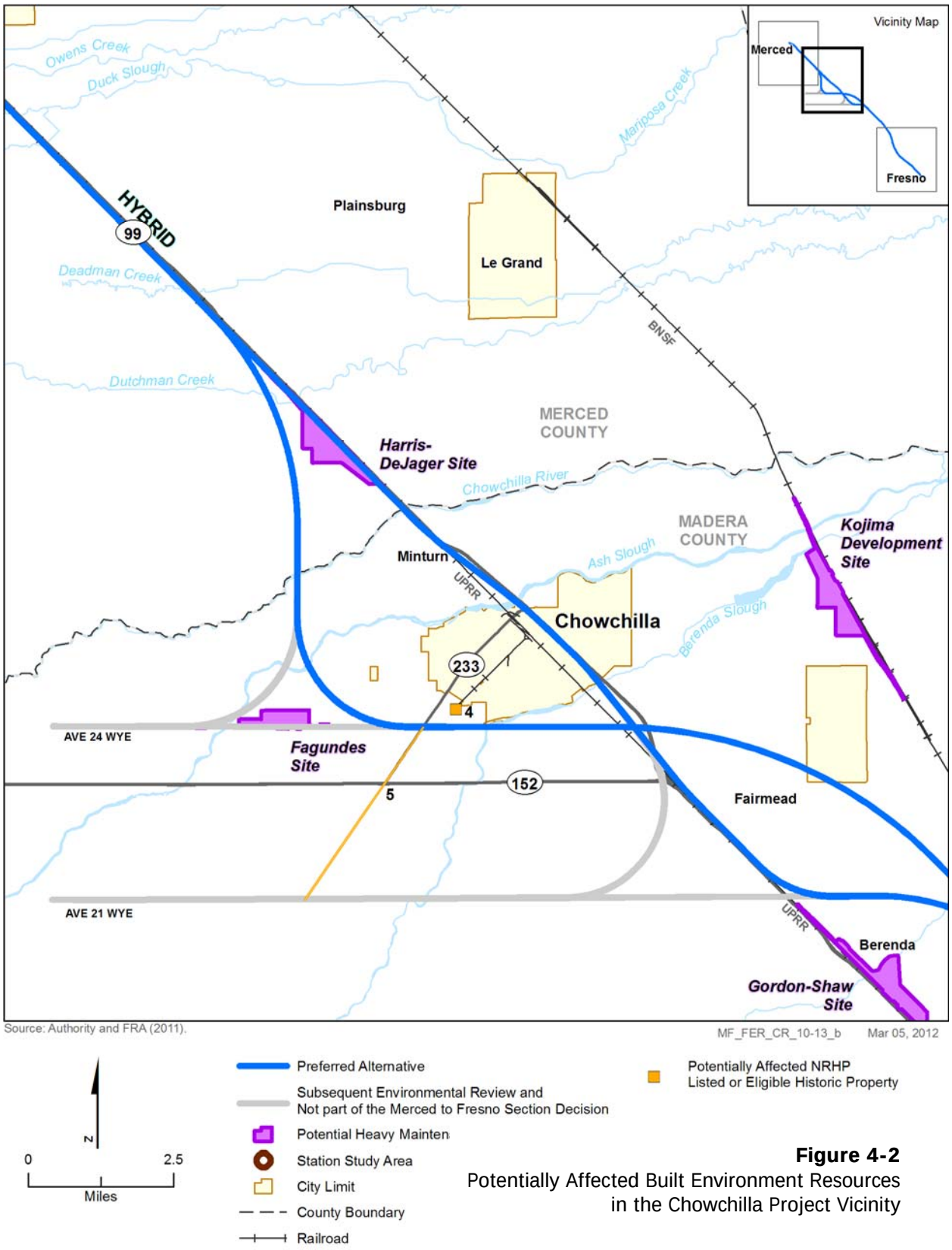

Figure 4-2
Potentially Affected Built Environment Resources in the Chowchilla Project Vicinity

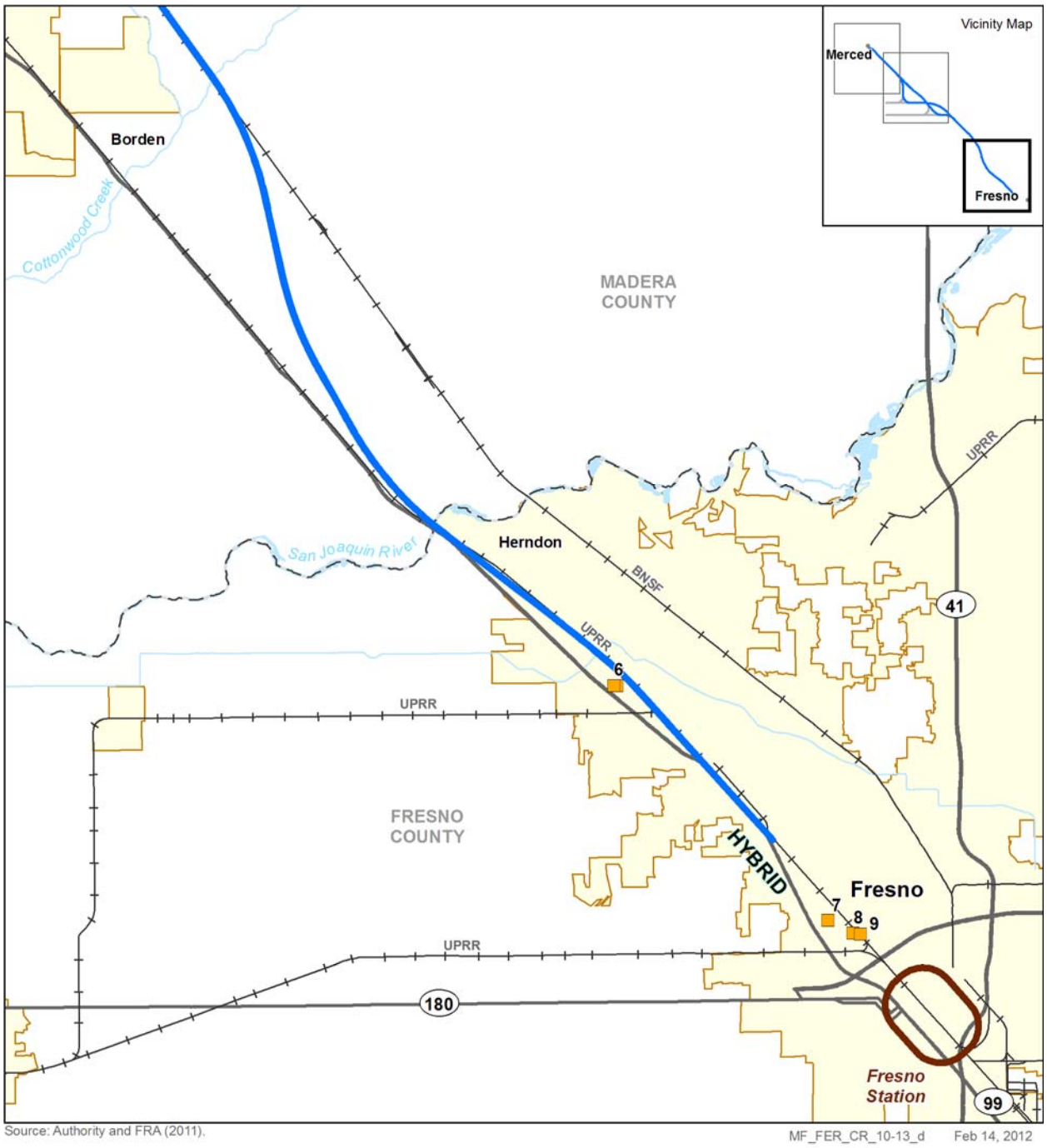

Figure 4-3
Potentially Affected Built Environment Resources in the Fresno Project Vicinity

4.4.1 PG&E Building

APN: 031-231-005
560 W 15th Street, Merced

Property Description

This former San Joaquin Light and Power Corporation is a one-story receiving station constructed circa 1915. This property meets NRHP Criterion C at the local level as a notable example of the Mission Revival style. The Mission Revival style gained prominence in the early 20th century and is characterized by smooth stucco walls, unadorned surfaces, limited fenestration, and curved gables or end walls. The style was commonly found in residential and small commercial buildings and less frequently in industrial buildings such as the subject building. The period of significance is the year of construction, circa 1915. The boundary of this historic property consists of the legally defined parcel for APN 031-231-005.The resource is located approximately 80 feet south of the proposed alignment (see Appendix A-2 for resource location).

Application of Criteria of Adverse Effect

The Project would have No Adverse Effect on the PG&E Building. See Table 4-8 for a detailed assessment of potential adverse effects of the Project on this historic property.

Table 4-8
Application of Criteria of Adverse Effect for PG&E Building

Examples of Adverse Effects, CFR 800.5(a)(2): Adverse effects on historic properties include, but are not limited to:	**Evaluation**
(i) Physical destruction of or damage to all or part of the property;	The Project would cause no direct physical destruction or damage to the resource because there would be no construction activities on the property. The historic property is located approximately 80 feet south of the anticipated construction activities associated with the tracks and retained-fill structure and approximately 390 feet west from a proposed surface parking lot associated with the Downtown Merced Station. In addition, the resource would be approximately 1,340 feet southeast from the proposed Downtown Merced Station building. The Project would cause no indirect physical destruction or damage that could result from construction vibration. Building damage from construction vibration would only be anticipated from impact pile-driving within 25 to 50 feet of buildings (Authority and FRA 2012e). Since construction of the Project would be at least 80 feet away from the historic property, damage from construction vibration would not occur. The Project would cause no indirect physical destruction or damage to any historic properties along the Merced to Fresno Section as the result of operational vibration because vibration is not anticipated to exceed 0.12 PPV in/sec at any historic property within the APE. Furthermore, HST projects typically generate significantly fewer vibration impacts as compared with noise impacts. The low vibration of HST operations is because of the very inefficient propagation of vibration through the soils in the project vicinity, the low vehicle input force, and the presence of elevated structures, which provide significant

Examples of Adverse Effects, CFR 800.5(a)(2): Adverse effects on historic properties include, but are not limited to:	**Evaluation**
	attenuation of vibration levels in heavily populated areas where vibration-sensitive receptors are primarily located. In addition, buildings and structures within the construction footprint were not included in the vibration analysis because it is anticipated that they would be demolished or removed prior to construction; therefore, there would be no operational vibration effects on historic properties (Authority and FRA 2012e).
(ii) Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the SOI's standards for the treatment of historic properties (36 CFR part 68) and applicable guidelines;	The resource would not undergo any alterations.
(iii) Removal of the property from its historic location;	The resource would not be removed from its historic location.
(iv) Change of the character of the property's use or of physical features within the property's setting that contributes to its historic significance;	There would be no change to the property's use and the physical features that contribute to the significance of the property would not be altered.
(v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;	The resource's integrity would not be compromised by the introduction of visual, atmospheric or audible elements. Although the project calls for construction of a retained fill structure to carry the rail line approximately 80 feet north of the historic property and within the viewshed, the building would still maintain its integrity of location, design, materials, workmanship, feeling, and association and as a result, would still be capable of conveying its significance under Criterion C. The only aspect of integrity that could be compromised is the setting. However, the setting of the PG&E Building, which was dominated by industrial and railroad-related buildings in the early 20th century, has already been altered in the last 30-40 years by demolition and new construction. Most of the historic buildings in the vicinity of the subject property have since been replaced with vacant lots or new buildings with uses and functions different from their historical counterparts. So although the view from the front of this historic property would be somewhat altered by the proposed retained fill structure, the view would not be altered in an adverse manner because the characteristic features that make the building significant and eligible would remain unchanged. The Project would not introduce atmospheric elements or noise from construction or operations that could impact the significant features of the property or compromise its integrity.
Finding:	The Project results in a finding of ***No Adverse Effect*** to the PG&E Building.

Conditions Proposed/Mitigation Measures

The Project would not cause an adverse effect to the PG&E Building; therefore, no mitigation measures are proposed.

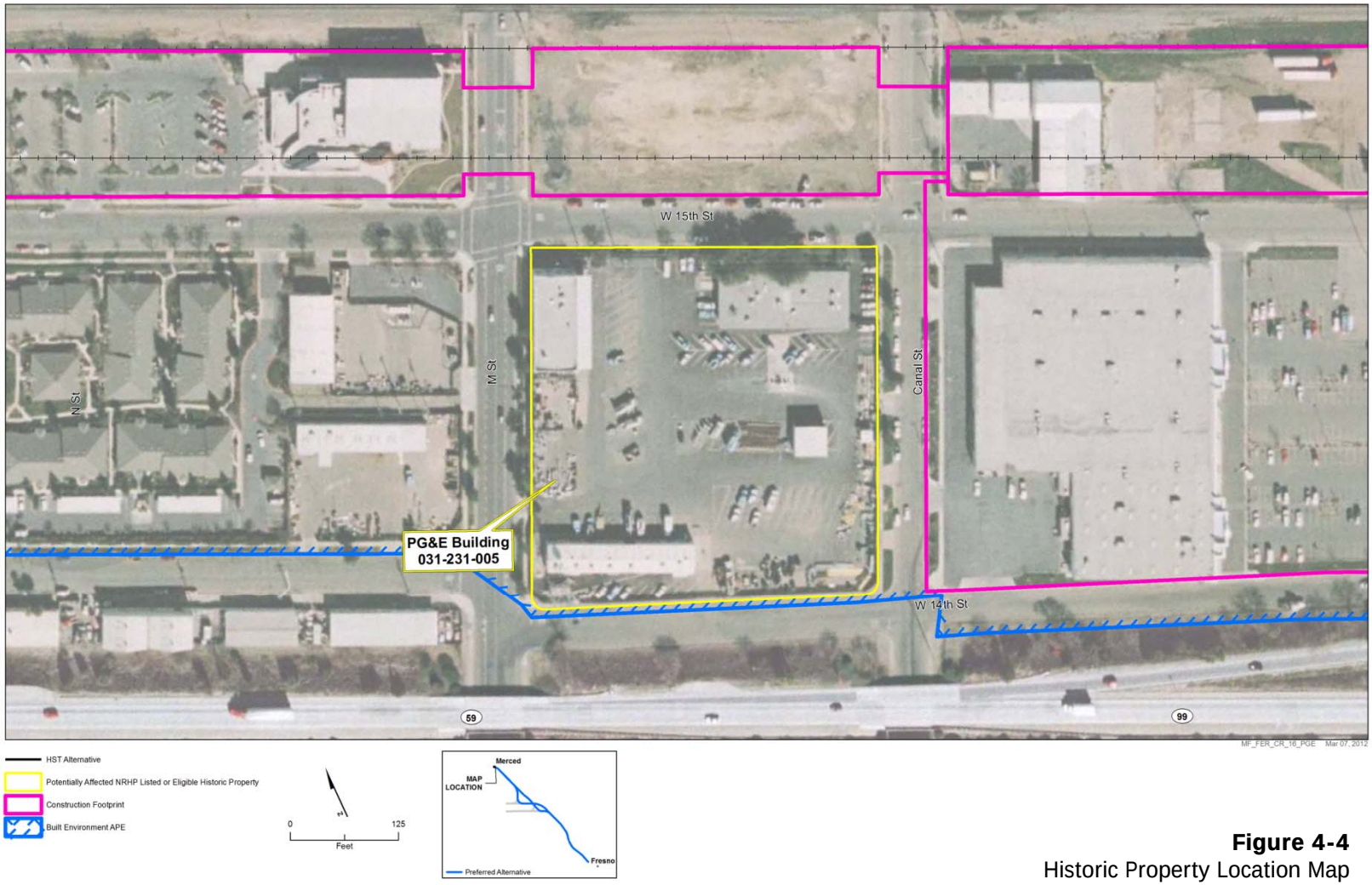

Figure 4-4
Historic Property Location Map
PG&E Building, Merced

4.4.2 Merced Southern Pacific Company Passenger Station

APN: 031-360-001 and 031-360-027
40 W 16th Street, Merced

Property Description

The Merced Southern Pacific Company Passenger Station is a one-story Neo-Classical style building constructed in 1926. The railroad depot is significant under NRHP Criterion A at the local level for its representation of the pinnacle of the Southern Pacific Company's growth in the region as well as the Southern Pacific's early 20th century influence on Merced. The railroad depot also is significant under Criterion C in the area of architecture as a fine example of an early 20th century Neo-Classical style passenger station. The building displays characteristic features of the style, including a façade with symmetrically balanced windows and door and a full-height colonnaded porch (in this case the passenger platform) with classical columns. Northwest of the depot is a similar, but modern building that functions as a transit center and does not contribute to the historic property. The depot was a representation of the rail line and served as a prominent symbol in the Central Valley town of Merced. The period of significance is 1926-1930. The boundary of this historic property consists of the legally defined parcels for APN 031-360-001 and 031-360-027. The resource is located 75 feet north of the proposed alignment (see Appendix A-2 for resource location).

Application of Criteria of Adverse Effect

The Project would have No Adverse Effect on the Merced Southern Pacific Company Passenger Station. See Table 4-9 for a detailed assessment of potential adverse effects of the Project on this historic property.

Table 4-9
Application of Criteria of Adverse Effect for Merced Southern Pacific Company Passenger Station

Examples of Adverse Effects, CFR 800.5(a)(2): Adverse effects on historic properties include, but are not limited to:	**Evaluation**
(i) Physical destruction of or damage to all or part of the property;	The Project would cause no direct physical destruction or damage to the resource because there would be no construction activities on the property. The historic property is located approximately 70 feet north of the anticipated construction activities associated with the tracks and retained fill structure and would be approximately 1,790 feet from the proposed Downtown Merced Station. The Project would cause no indirect physical destruction or damage as the result of construction vibration. Building damage from construction vibration would only be anticipated from impact pile-driving within 25 to 50 feet of buildings (Authority and FRA 2012e). Since construction of the Project would be at least 75 feet away from the historic property, damage from construction vibration would not occur. The Project would cause no indirect physical destruction or damage to any historic properties along the Merced to Fresno Section as the result of operational vibration because vibration is not anticipated to exceed 0.12 PPV in/sec at any historic property within the APE. Furthermore, HST projects typically generate significantly fewer vibration impacts as compared with noise impacts. The low vibration of HST operations is because

Examples of Adverse Effects, CFR 800.5(a)(2): Adverse effects on historic properties include, but are not limited to:	**Evaluation**
	of the very inefficient propagation of vibration through the soils in the project vicinity, the low vehicle input force, and the presence of elevated structures, which provide significant attenuation of vibration levels in heavily populated areas where vibration-sensitive receptors are primarily located. In addition, buildings and structures within the construction footprint were not included in the vibration analysis because it is anticipated that they would be demolished or removed prior to construction; therefore, there would be no operational vibration effects on historic properties (Authority and FRA 2012e).
(ii) Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the SOI's standards for the treatment of historic properties (36 CFR part 68) and applicable guidelines;	The resource would not undergo any alterations.
(iii) Removal of the property from its historic location;	The resource would not be removed from its historic location.
(iv) Change of the character of the property's use or of physical features within the property's setting that contributes to its historic significance;	There would be no change to the property's use and the physical features that contribute to the significance of the property would not be altered.
(v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;	The resource's integrity would not be compromised by the introduction of visual, atmospheric or audible elements. Although the project calls for construction of a retained fill structure to carry the rail line approximately 70 feet south of the resource and within the viewshed, the building would still maintain its integrity of location, design, materials, workmanship, and feeling and as a result, would still be capable of conveying its significance under Criterion C. The station would still maintain its relationship to the original UPRR line and therefore, the resource would also retain its integrity of association and its ability to convey significance under Criterion A. The only aspect of integrity that could be compromised is the setting. However, the setting of the Merced Southern Pacific Company Passenger Station, which was dominated by industrial and railroad-related buildings in the early 20th century, has already been altered in the last 30-40 years by demolition and new construction. Most of the historic buildings in the vicinity of the subject property were replaced with vacant lots or new buildings with uses and functions different from their historical counterparts. So although the view from the track-side of this historic property would be somewhat altered by the addition of a retained fill structure, the view would not be altered in an adverse manner because the characteristic features that make the building significant and eligible would remain unchanged. The Project would not introduce atmospheric elements or noise from construction or operations that could impact the significant features of the property or compromise its integrity.
Finding:	The Project results in a finding of ***No Adverse Effect*** to the Merced Southern Pacific Company Passenger Station.

Conditions Proposed/Mitigation Measures

The Project would not cause an adverse effect to the Merced Southern Pacific Company Passenger Station; therefore, no mitigation measures are proposed.

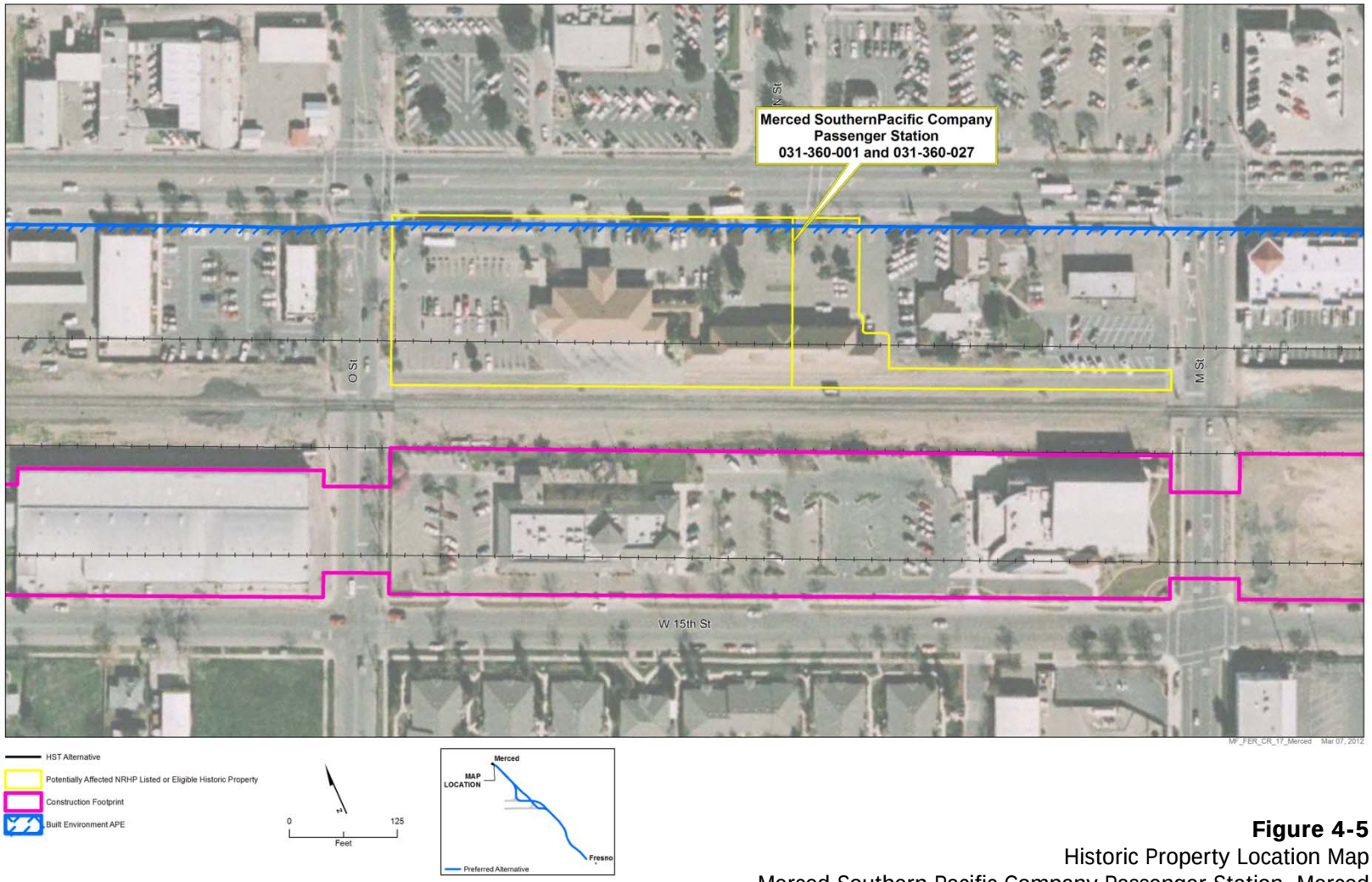

Figure 4-5
Historic Property Location Map
Merced Southern Pacific Company Passenger Station, Merced

4.4.3 KAMB/California Highway Patrol Building

APN: 034-205-005
90 E. 16th Street, Merced

Property Description

The former California Highway Patrol Building is a one-story, stucco-covered Spanish Colonial Revival building constructed in 1933. Significant under NRHP Criterion C, the building was designed in the Spanish Colonial Revival style, a style which gained prominence in the early 20th century. Spanish Colonial Revival architecture was influenced by the opening of the Panama Canal and the 1915 Panama-California Exposition. Characterized by smooth stucco walls, low-pitched, clay-tile roofs, and stucco or terra-cotta ornamentation, the style was commonly used in residential and small commercial buildings and less frequently found in civic buildings. The KAMB/California Highway Patrol Building retains a high degree of integrity from its 1930s construction date and is unique in the City of Merced as a civic building designed in the Spanish Colonial Revival style. The period of significance consists of the year of construction, 1933. The boundary of this historic property consists of the legally defined parcel for APN 031-231-005. The resource is located approximately 160 feet north of the proposed alignment (see Figures 4-6, 4-7, 4-8).

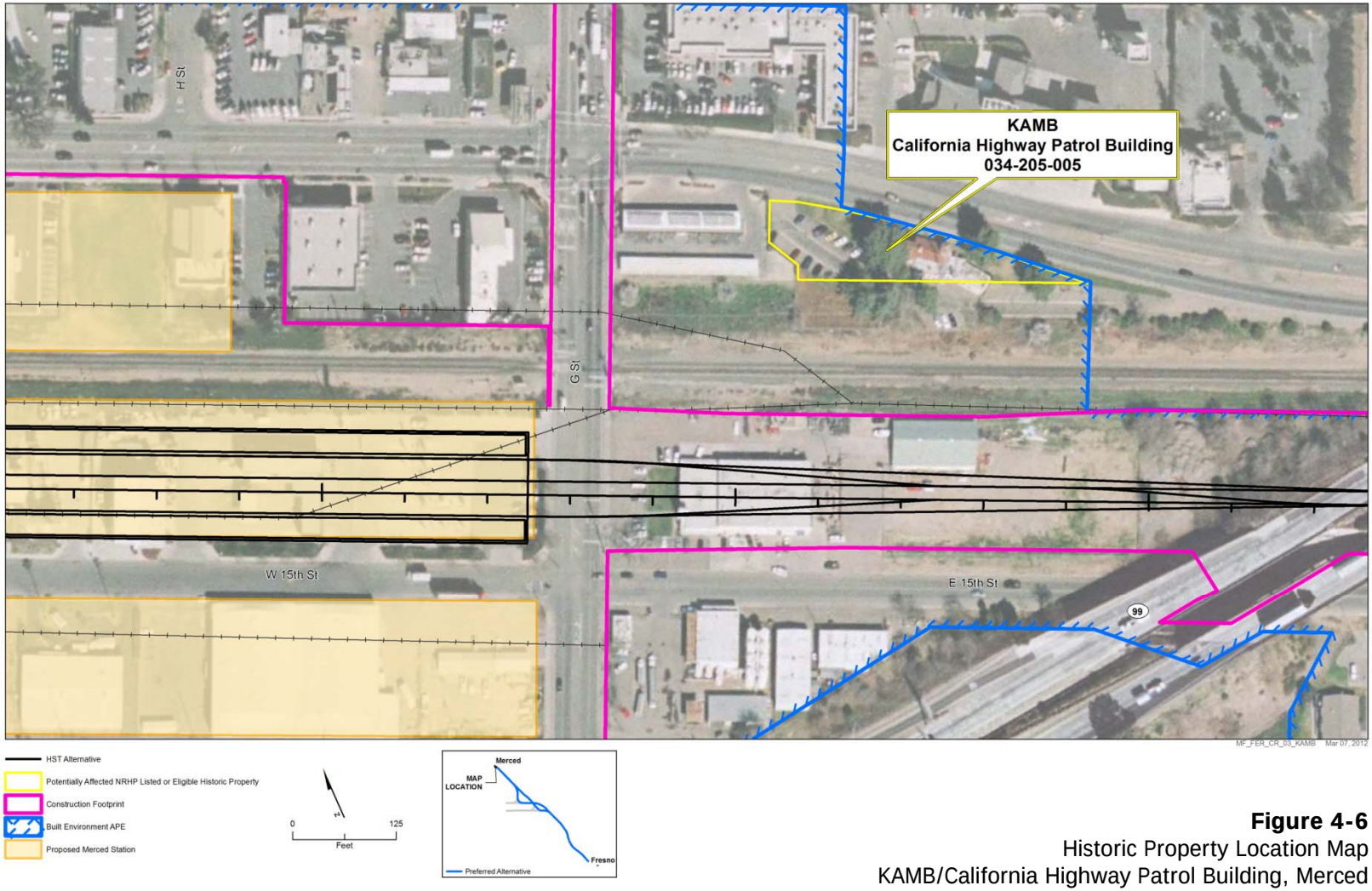

Figure 4-6
Historic Property Location Map
KAMB/California Highway Patrol Building, Merced

Figure 4-7
KAMB/California Highway Patrol Building,
view west to G Street.

Figure 4-8
KAMB/California Highway Patrol Building,
view west showing a simulation of the proposed G Street overcrossing.

Application of Criteria of Adverse Effect

The Project would have No Adverse Effect on the KAMB/California Highway Patrol Building. See Table 4-10 for a detailed assessment of potential adverse effects of the Project on this historic property.

Table 4-10
Application of Criteria of Adverse Effect for KAMB/California Highway Patrol Building

Examples of Adverse Effects, CFR 800.5(a)(2): Adverse effects on historic properties include, but are not limited to:	**Evaluation**
(i) Physical destruction of or damage to all or part of the property;	The Project would cause no direct physical destruction or damage to the resource because there would be no construction activities on the property. The historic property is located approximately 160 feet north of the proposed construction activities associated with the at-grade tracks and is approximately 185 feet east from the proposed G Street overcrossing. The historic property is also approximately 315 feet east of the proposed Downtown Merced Station. The Project would cause no indirect physical destruction or damage that could result from construction vibration. Building damage from construction vibration would only be anticipated from impact pile-driving within 25 to 50 feet of buildings (Authority and FRA 2011a). Since construction of the Project would be at least 160 feet away from the property, damage from construction vibration would not occur. The Project would cause no indirect physical destruction or damage to any historic properties along the Merced to Fresno Section as the result of operational vibration because vibration is not anticipated to exceed 0.12 PPV in/sec at any historic property within the APE. Furthermore, HST projects typically generate significantly fewer vibration impacts as compared with noise impacts. The low vibration of HST operations is because of the very inefficient propagation of vibration through the soils in the project vicinity, the low vehicle input force, and the presence of elevated structures, which provide significant attenuation of vibration levels in heavily populated areas where vibration-sensitive receptors are primarily located. In addition, buildings and structures within the construction footprint were not included in the vibration analysis because it is anticipated that they would be demolished or removed prior to construction; therefore, there would be no operational vibration effects on historic properties (Authority and FRA 2012e).
(ii) Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the SOI's standards for the treatment of historic properties (36 CFR part 68) and applicable guidelines;	The resource would not undergo any alterations.
(iii) Removal of the property from its historic location;	The resource would not be removed from its historic location.
(iv) Change of the character of the property's use or of physical features within the property's	There would be no change to the property's use and the physical features that contribute to the significance of the

Examples of Adverse Effects, CFR 800.5(a)(2): Adverse effects on historic properties include, but are not limited to:	**Evaluation**
setting that contributes to its historic significance;	property would not be altered.
(v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;	The resource's integrity would not be compromised by the introduction of visual, atmospheric or audible elements. While the Project calls for construction of at-grade trackage approximately 160 feet south and an overcrossing at G Street approximately 185 feet west of the resource (both within the viewshed), the physical features would not be compromised and therefore, the building would retain integrity of location, design, materials, workmanship, feeling, and association. As a result of retaining a high degree of integrity, the building would still be capable of conveying its significance under Criterion C. The only aspect of integrity that could be compromised is the setting, but since the building's significance is largely derived from its physical characteristics, construction of the Project would not alter the view in an adverse manner because the characteristic features that make the building significant and eligible would remain unchanged. In further support of this finding, portions of the Project and the G Street overcrossing, which would be constructed to the rear and west side of the building, would be partially obscured from view by existing vegetation on the west side of the building. The Project would not introduce atmospheric elements or noise from construction or operations that could impact the significant features of the property, or compromise its integrity.
Finding:	The Project results in a finding of ***No Adverse Effect*** to the KAMB/California Highway Patrol Building.

Conditions Proposed/Mitigation Measures

The Project would not cause an adverse effect to the KAMB/California Highway Patrol Building; therefore, no mitigation measures are proposed.

4.4.4 24302 Road 15, Chowchilla

APN: 026-233-011

Property Description

The residence at 24302 Road 15 in Chowchilla is a two-and-one-half-story, Colonial Revival style building that was constructed circa 1920. The property is locally significant under NRHP Criterion C because it embodies elements of a Colonial Revival style. This particular example exhibits simple Colonial Revival detailing in its hipped roof, rectangular shaped, double-hung, paired windows, symmetrical façade, pediment above the entrance, and wood clapboard siding. This is an example of a two-story, simple Colonial Revival that is not well-represented in the rural area surrounding Chowchilla. The period of significance consists of the period of construction, circa 1920. The boundary of this historic property consists of the legally defined parcel for APN 026-233-011. The resource is located approximately 1,420 feet north of the proposed alignment and immediately adjacent to roadway improvements associated with Road 15 (see Figure 4-9 for resource location).

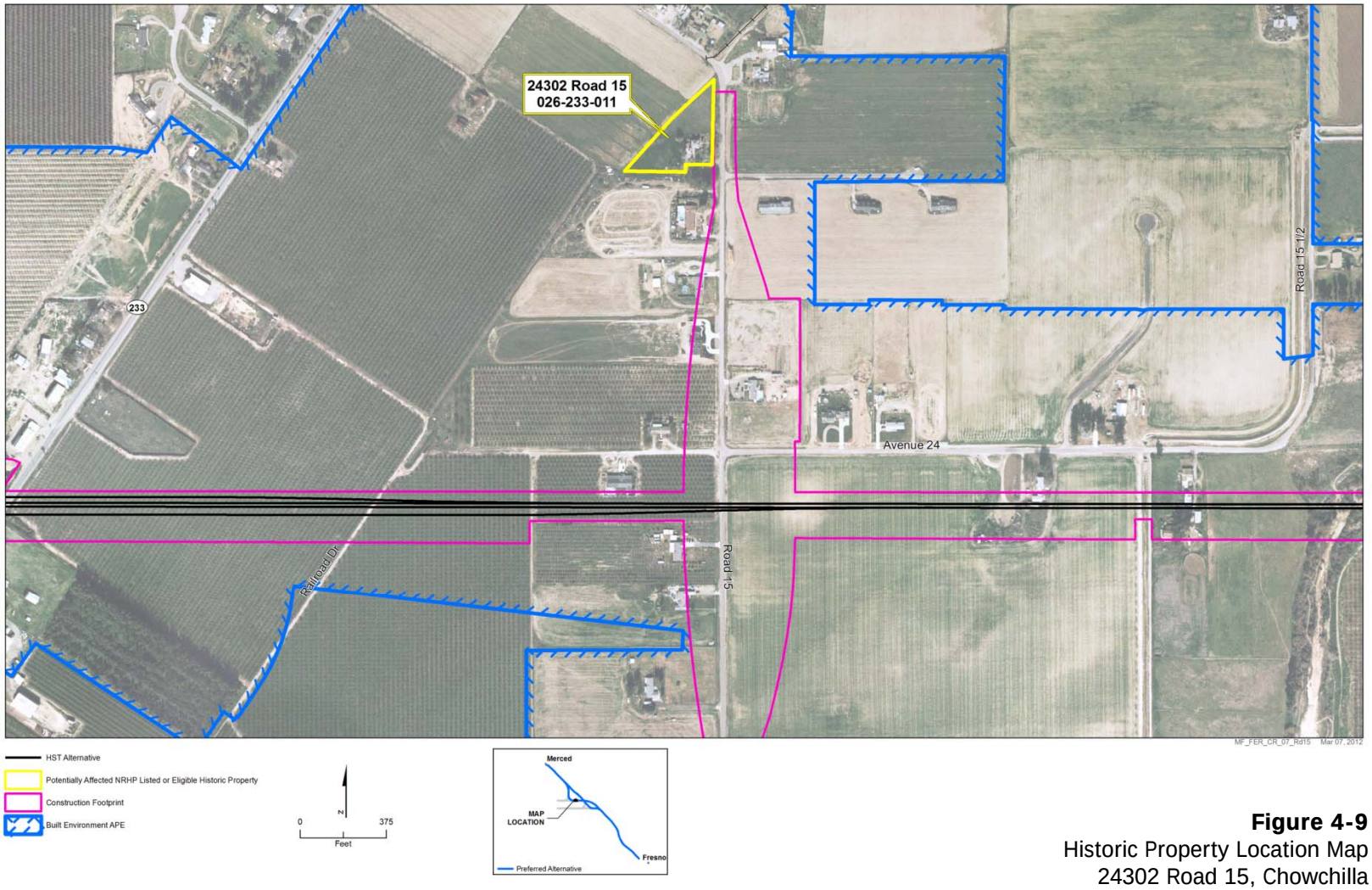

Figure 4-9
Historic Property Location Map
24302 Road 15, Chowchilla

Application of Criteria of Adverse Effect

The Project would have no Adverse Effect on the residence at 24302 Road 15 in Chowchilla. See Table 4-11 for a detailed assessment of potential adverse effects of the Project on this historic property.

Table 4-11
Application of Criteria of Adverse Effect for 24302 Road 15

Examples of Adverse Effects, CFR 800.5(a)(2): Adverse effects on historic properties include, but are not limited to:	**Evaluation**
(i) Physical destruction of or damage to all or part of the property;	The Project would cause no direct physical destruction or damage to the resource because there would be no construction activities on the property. The historic property is located approximately 1,420 feet north of the proposed construction activities associated with the at-grade tracks for the Avenue 24 Wye and is located adjacent to the proposed roadway improvements on Road 15. Roadway improvements on Road 15 include a proposed overpass, but only minor grading and resurfacing would occur immediately adjacent to the historic property. No construction or staging associated with the Road 15 improvements would encroach on this property. The Project would cause no indirect physical destruction or damage that could result from construction vibration. Building damage from construction vibration would only be anticipated from impact pile-driving within 25 to 50 feet of buildings (Authority and FRA 2012e). While the eastern parcel line of 24302 Road 15 is immediately adjacent to proposed roadway improvements, the residence is set back approximately 50 feet from the parcel line and as a result, damage to the historic property from construction vibration would not occur. The Project would cause no indirect physical destruction or damage to any historic properties along the Merced to Fresno Section as the result of operational vibration because vibration is not anticipated to exceed 0.12 PPV in/sec at any historic property within the APE. Furthermore, HST projects typically generate significantly fewer vibration impacts as compared with noise impacts. The low vibration of HST operations is because of the very inefficient propagation of vibration through the soils in the project vicinity, the low vehicle input force, and the presence of elevated structures, which provide significant attenuation of vibration levels in heavily populated areas where vibration-sensitive receptors are primarily located. In addition, buildings and structures within the construction footprint were not included in the vibration analysis because it is anticipated that they would be demolished or removed prior to construction; therefore, there would be no operational vibration effects on historic properties (Authority and FRA 2012e).
(ii) Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the SOI's standards for the treatment of historic	The resource would not undergo any alterations.

Examples of Adverse Effects, CFR 800.5(a)(2): Adverse effects on historic properties include, but are not limited to:	**Evaluation**
properties (36 CFR part 68) and applicable guidelines;	
(iii) Removal of the property from its historic location;	The resource would not be removed from its historic location.
(iv) Change of the character of the property's use or of physical features within the property's setting that contributes to its historic significance;	There would be no change to the property's use and the physical features that contribute to the significance of the property would not be altered.
(v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;	The resource's integrity would not be compromised by the introduction of visual, atmospheric or audible elements. Construction or operation of the Project would not introduce visual or atmospheric elements that could impact the significant features of the property or compromise its integrity. While the project calls for roadway improvements adjacent to the property on Road 15, the physical features of the historic property would not be compromised and therefore, the property would retain integrity of location, design, materials, workmanship, feeling, and association. As a result, the building would still be capable of conveying its significance under Criterion C. The only aspect of integrity that could be compromised is the setting, but since the building's significance is largely derived from its physical characteristics, construction of the Project would not alter the view in an adverse manner because the characteristic features that make the building significant and eligible would remain unchanged. Increased noise levels as the result of operation of the Project would not impact the significant features of the property or compromise its integrity, despite the severe noise impact that was predicted to occur at this location. Noise assessments were based on two types of track structure: ballast and slab. Currently the noise level at the residence is 50 A-weighted decibels (dBA) and is expected to increase to 60dBA if a ballasted track is constructed and to 62dBA if a slab track is constructed. The historic property is located approximately ¼-mile north of the proposed HST alignment along Avenue 24. Currently, there is no train alignment in the vicinity; the closest railroad, the UPRR, is approximately 3 miles east. The property is situated in a suburban/rural area south of the City of Chowchilla on the west side of Road 15. While noise assessments conducted in the vicinity of the historic property predicted a severe noise impact at this location, the increase in noise levels is not expected to affect the historic characteristics of the property that make it significant and eligible for the NRHP. The historic property is eligible under Criterion C as a distinct example of Colonial Revival architecture. Construction of the HST alignment and the roadway improvements on Road 15 would not compromise the property's integrity of location, design, materials, workmanship, and association. The only aspects of integrity that could be compromised by increased noise levels is the setting and feeling, but since

Examples of Adverse Effects, CFR 800.5(a)(2): Adverse effects on historic properties include, but are not limited to:	**Evaluation**
	the building's significance is largely derived from its physical characteristics, increased noised levels would not alter the property in an adverse manner. This is because the characteristic features that make the building significant and eligible would remain unchanged. As a result, the building would still be capable of conveying its significance under Criterion C.
Finding:	The Project results in a finding of ***No Adverse Effect*** to 24302 Road 15.

Conditions Proposed / Mitigation Measures

The Project would not cause an adverse effect to 24302 Road 15; therefore, no mitigation measures are proposed.

4.4.5 Robertson Boulevard Tree Row

No APN
Robertson Boulevard, Chowchilla

Property Description

Robertson Boulevard Tree Row is a row of tall Canary Island Palm trees alternating with short Mexican Fan Palms and oleanders that line both sides of an 11-mile stretch of Robertson Boulevard (SR 233) in Chowchilla. The Robertson Boulevard Tree Row was determined to be eligible under NRHP Criterion A at the local level of significance. The trees were planted by Orlando Alison Robertson as part of the marketing efforts to attract settlers to Chowchilla and the surrounding farmlands Robertson marketed to Mid-west farmers. The row of trees is a recognizable landmark and has a direct association with the initial development of Chowchilla. In addition to meeting NRHP Criterion A, the tree row also meets NRHP Criterion C, at the local level of significance as an early 20th century designed landscape feature. The trees were planted as ornamental shade trees and were evenly spaced along the 11 miles of road and the alternating Mexican Fan Palms and the Canary Island Palms provide a distinctive and picturesque landscape in Chowchilla that is visible for miles. Both species of trees were a popular landscape feature for cities throughout California during this time period. The period of significance is 1912-1913, the year the tree row was planted. This tree row is also a California Point of Historical Interest and was designated as such in 1989. The boundary of this historic property stretches 11 miles along Robertson Blvd. (SR 233) from SR 99 to SR 152 and includes the shade trees on both sides of the road within the road's right-of-way. A portion of the Robertson Boulevard Tree Row falls within the construction footprint for the Project (see Figures 4-10 through 4-17).

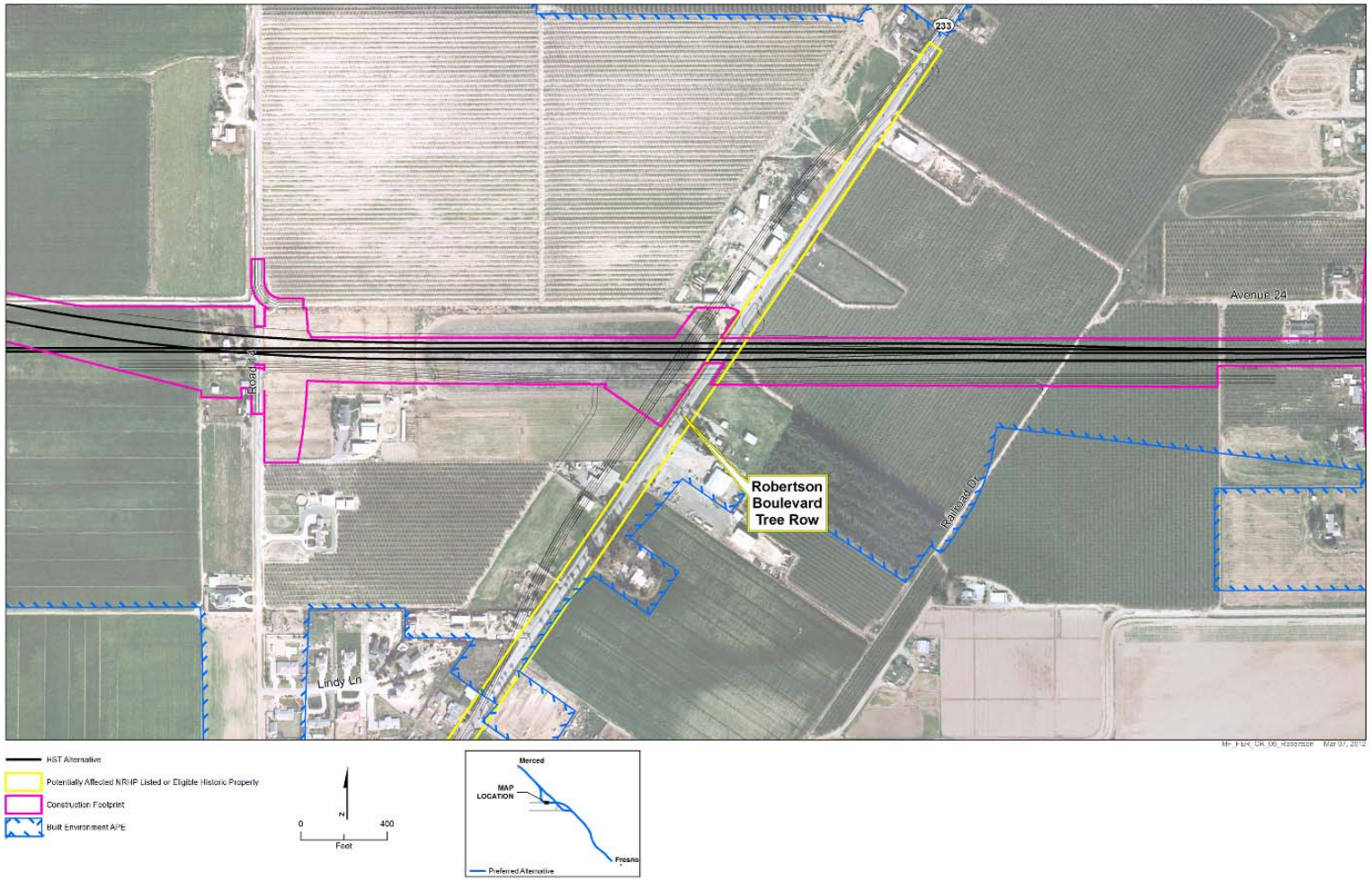

Figure 4-10
Historic Property Location Map
Robertson Blvd. Tree Row, Chowchilla
Alternative 1

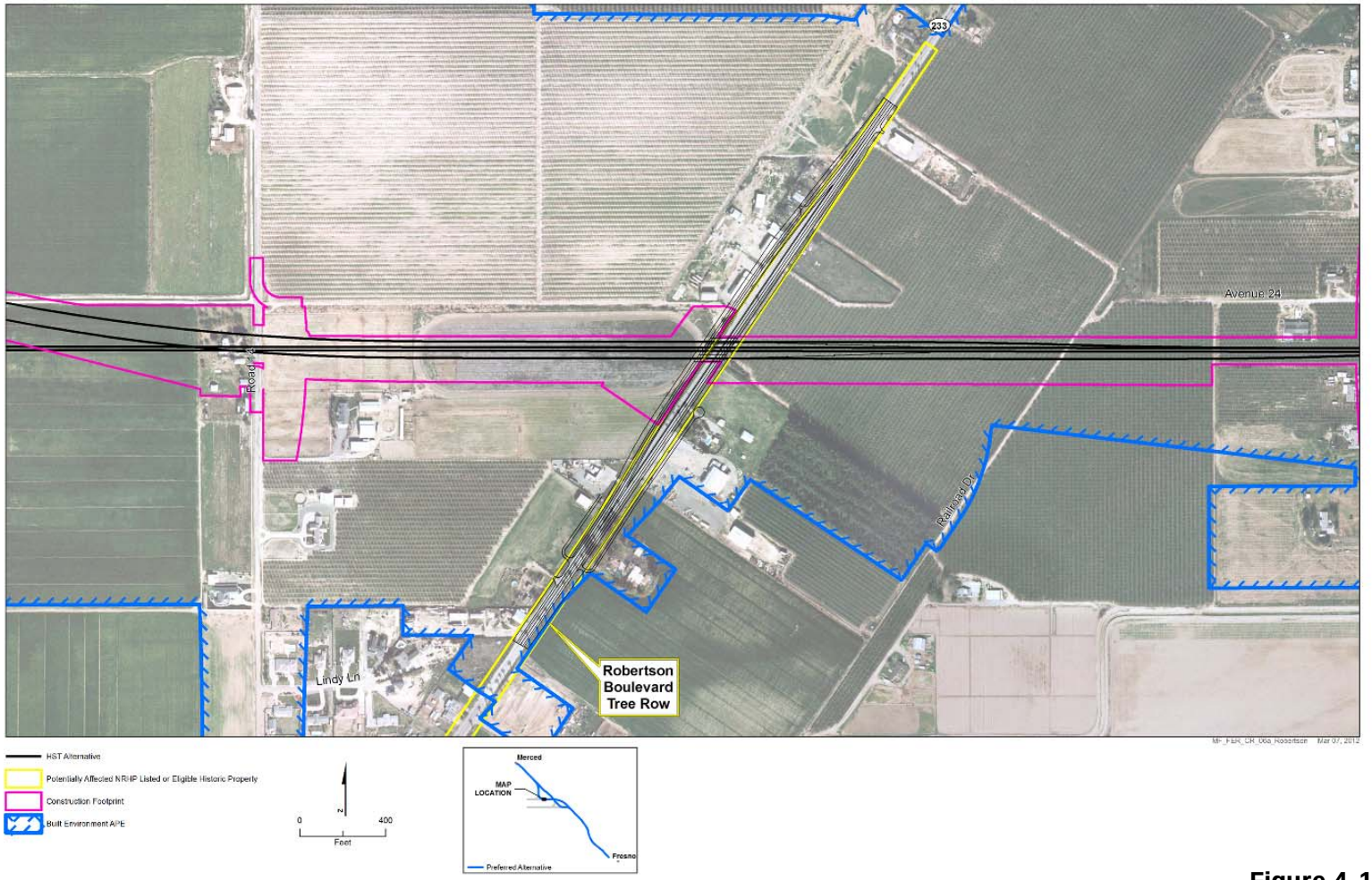

Figure 4-11
Historic Property Location Map
Robertson Blvd. Tree Row, Chowchilla
Alternative 2

Figure 4-12
Robertson Boulevard Tree Row, view northeast from southern end of proposed improvements near Avenue 24 showing a simulation of the grade separation associated with Alternative 1.

Figure 4-13
Robertson Boulevard Tree Row,
view northeast from southern end of proposed improvements near Avenue 24.

Figure 4-14
Robertson Boulevard Tree Row, view northeast from southern end of proposed improvements near Avenue 24 showing a simulation of the undercrossing associated with Alternative 2

Figure 4-15
Robertson Boulevard Tree Row, view southwest from northern end of proposed improvements near Avenue 24.

Figure 4-16
Robertson Boulevard Tree Row, view southwest from northern end of proposed improvements near Avenue 24 showing a simulation of the grade separation associated with Alternative 1

Figure 4-17
Robertson Boulevard Tree Row, view southwest from northern end of proposed improvements near Avenue 24 showing a simulation of the undercrossing associated with Alternative 2.

Application of Criteria of Adverse Effect

The Project would have an Adverse Effect on the Robertson Boulevard Tree Row. See Table 4-12 for a detailed assessment of potential adverse effects of the Project on this historic property.

Table 4-12
Application of Criteria of Adverse Effect for Robertson Boulevard Tree Row

Examples of Adverse Effects, CFR 800.5(a)(2): Adverse effects on historic properties include, but are not limited to:	**Evaluation**
(i) Physical destruction of or damage to all or part of the property;	Construction of the Project would cause an adverse effect to the Robertson Boulevard Tree Row because construction activities would result in physical destruction and damage to portions of the historic property. The historic property, which spans 11 miles between SR 99 and SR 152 in Chowchilla, would be directly impacted by proposed construction activities at Robertson Boulevard and Avenue 24. Two design alternatives are proposed in this location. Alternative 1 calls for a grade separation option that would require removal of approximately 15-20 trees, and Alternative 2 calls for an underpass option that would require removal of approximately 25-30 trees. Removal of portions of this resource would diminish its integrity of location, design, materials, workmanship, feeling, and association and as a result, would make it incapable of conveying its significance under Criteria A and C. The Project would cause no indirect physical destruction or damage to any historic properties along the Merced to Fresno Section as the result of operational vibration because vibration is not anticipated to exceed 0.12 PPV in/sec at any historic property within the APE. Furthermore, HST projects typically generate significantly fewer vibration impacts as compared with noise impacts. The low vibration of HST operations is because of the very inefficient propagation of vibration through the soils in the project vicinity, the low vehicle input force, and the presence of elevated structures, which provide significant attenuation of vibration levels in heavily populated areas where vibration-sensitive receptors are primarily located. In addition, buildings and structures within the construction footprint were not included in the vibration analysis because it is anticipated that they would be demolished or removed prior to construction; therefore, there would be no operational vibration effects on historic properties (Authority and FRA 2012e).
(ii) Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of	The resource would undergo alterations that are not consistent with the SOI's standards for the treatment of historic properties.

Examples of Adverse Effects, CFR 800.5(a)(2): Adverse effects on historic properties include, but are not limited to:	**Evaluation**
handicapped access, that is not consistent with the SOI's standards for the treatment of historic properties (36 CFR part 68) and applicable guidelines;	
(iii) Removal of the property from its historic location;	A portion of the resource would be destroyed.
(iv) Change of the character of the property's use or of physical features within the property's setting that contributes to its historic significance;	There would be a significant change to the physical features that contribute to the significance of the property.
(v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;	The historic property's integrity would be compromised by the introduction of visual elements. Construction of a new HST line, and a grade separation or underpass where none existed previously, would interrupt the procession of palm trees on Robertson Boulevard, which are a recognizable landmark in Chowchilla. This new visual element would diminish the resource's integrity of setting, making it further incapable of conveying its significance under Criterion A. Construction or operation of the Project would not introduce atmospheric elements that could impact the significant features of the property or compromise its integrity.
Finding:	The Project results in a finding of **Adverse Effect** to the Robertson Boulevard Tree Row.

Conditions Proposed/Mitigation Measures

1. Develop Protection and Stabilization Measures

Development of protection and stabilization measures is recommended as treatment to help minimize adverse effects caused by removing a portion of Robertson Boulevard Tree Row. This minimization strategy will be developed in consultation with the land-owning agency as well as the SHPO and the MOA signatories, as required by the PA. Such measures will include, but will not be limited to, vibration monitoring of construction in the vicinity of the trees; cordoning off trees from construction activities; shielding trees from dust and debris; and stabilizing trees adjacent to construction, as appropriate.

2. Prepare and Submit NRHP/CRHR Nomination

Preparation and submission of a NRHP/CRHR nomination is recommended as a treatment to mitigate adverse effects caused by removing a portion of the Robertson Boulevard Tree Row. Current photographs of the property and any other documentation of the physical structure needed for the nomination will be acquired prior to the start of project construction. The nomination may also use other current and/or historic images prepared as part of other mitigation activities. Background and historic research will be conducted and incorporated into the historic narrative and statement of significance portion of the nomination. Copies of the documentation will be offered to the appropriate local governments, agencies,

historical societies, and libraries following consultation with and approval from the SHPO, the Authority, and the local agency with jurisdiction over the property. The electronic copy of the documentation may also be placed on an agency or organization's web site.

3. Prepare and Submit Historic American Landscapes Survey (HALS) Documentation

Preparation and submission of HALS documentation is recommended as a treatment to mitigate adverse effects caused by removing a portion of the Robertson Boulevard Tree Row. The historic property will be documented in compliance with the HABS/HAER/HALS programs. Consultation with the SHPO, the Western Regional Office of the NPS (Oakland, California), and the consulting parties will be undertaken.

Prior to the start of construction, photographs will be taken of the historic property showing it in context, as well as details of character-defining features. The photographs will be processed for archival permanence in accordance with HABS/HAER/HALS photographic specifications. Each view will be fully captioned and, if necessary, perspective corrected. Oblique aerial photography will be considered as a photographic recordation option in these coordination efforts.

The recordation will follow the NPS HALS guidelines. It is anticipated that the recordation of this historic property will include archival and digital reproduction of current and historic images, a historical narrative, and measured drawings, if available. Copies of the documentation will be offered to the appropriate local governments, agencies, historical societies, and libraries following consultation with and approval from the SHPO, the Authority, and the local agency with jurisdiction over the property. The electronic copy of the documentation may also be placed on an agency or organization's web site.

4. Prepare Interpretive Exhibits

Preparation of interpretive exhibits is recommended as a treatment to mitigate adverse effects caused by removing a portion of the Robertson Boulevard Tree Row. Interpretive exhibits will utilize images, narrative history, drawings, or other materials produced for other mitigations, including the HALS documentation and the NRHP/CRHR nomination. The interpretive exhibits may be in the form of, but are not limited to, interpretive display panels and/or printed material for dissemination to the public. The interpretive exhibits may be installed at local libraries, historical societies, or public buildings.

It is also recommended that an informative permanent metal plaque or roadside marker be installed at an appropriate location(s) along Robertson Boulevard or at nearby public locations. The plaque will provide a brief history of the Robertson Boulevard Tree Row, as well as its historical design features and characteristics.

5. Plan Repair of Inadvertent Damage

Preparation of a plan for repair of inadvertent damage is recommended as a treatment to help mitigate additional adverse effects to the Robertson Boulevard Tree Row caused by construction activities. The plan will be developed prior to construction and will call for documentation of the inadvertent damage (should it occur) and consultation with the SHPO to determine the appropriate course of action. If any trees are inadvertently permanently damaged/destroyed/removed as the result of construction activities, a plan will be enacted to repair/relocate/replace those trees in the same location or at an alternate location and will take into account setting, context, and design. Photographs documenting the current condition of the Robertson Boulevard Tree Row (the portion within the APE for the Project) will be taken before construction begins in an effort to establish the baseline condition for assessing damage. Photographs taken as part of other mitigation activities may be used for this purpose. A copy of the photographic documentation will be provided to the land-owning agency. Prior to implementation, any plans to repair/relocate/replace will be submitted to SHPO for review and comment.

6. Mitigate Adverse Effects through Relocation

Relocation is recommended as a treatment to mitigate adverse effects caused by damage/destruction/removal of a portion of the tree row. The plan for relocation and implementation of relocation will take place prior to construction. The relocation of a portion of the historic property will take into account the site, design, and layout (i.e., relationship of the trees to the street and to the other trees). The relocation plan will provide for stabilization and maintenance of the trees before, during, and after the move. Moving the trees could result in minor impacts on air emissions from equipment and vehicles and minor effects on developed or undeveloped sites.

7. Coordinate with Consulting Parties

All avoidance, minimization, and mitigation measures proposed for this historic property will be developed in consultation with the consulting parties. Comments received will be used to develop the BETP and the MOA.

4.4.6 Forestiere Underground Gardens

APN: 510-233-03 and 510-233-04
5021 W. Shaw Avenue, Fresno

Property Description

Forestiere Underground Gardens was listed in the NRHP in 1977 (NPS #77000293) and designated a California Historical Landmark (No. 916) in 1978. The gardens consist of a series of underground passages, rooms, ponds, and gardens that were excavated and constructed by Sicilian immigrant, Baldasare Forestiere between 1906 and 1946. Although not specifically stated in the NRHP nomination form or landmark file, the property is likely significant under Criterion C in the areas of environmental design and folk art as a unique complex of underground rooms, passages, ponds, and gardens that unite old and new world construction techniques. The property may also be eligible under Criterion D for the property's potential to yield information important to the fields of architecture and environmental design. The period of significance is 1906 through 1946.

Both the NRHP nomination and the California Historical Landmark documentation have incomplete data with regard to the parcel numbers for the eligible resource. In the NRHP nomination, one incomplete parcel number is shown on a map. The parcel shown is larger than the parcels as currently recorded by the County, indicating that the parcel may have been subdivided since that form was prepared in the 1970s. The State Historical Landmark nomination indicates that the Forestiere Underground Gardens was assigned the parcel numbers 187-003 and 187-004 by the Fresno Assessor's office. These also appear to be incomplete parcel numbers, but do indicate that both parcels were considered part of the historic resource being nominated as a California Historical Landmark. Based on the analysis of previous documentation, and on indications during the site visit that the underground features may extend across both of the parcels currently owned by Forestiere Underground Gardens, for the purpose of this update the boundaries of the resource include both parcels 510-233-03 and 04. Forestiere Underground Gardens is located adjacent to the proposed overcrossing at W. Shaw Avenue and associated roadway improvements on N. Cornelia Avenue (see Figures 4-18, 4-19, and 4-20).

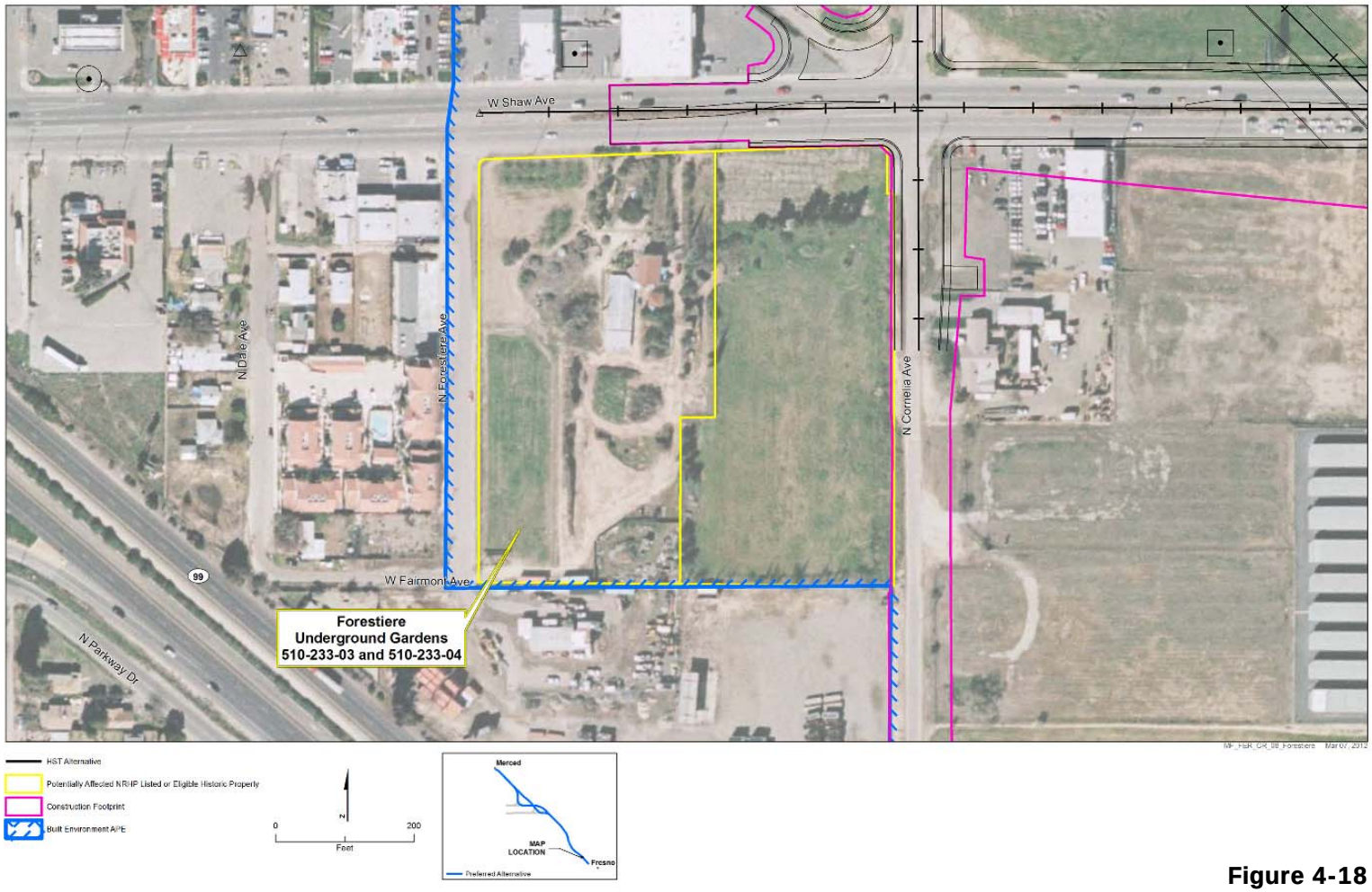

Figure 4-18
Historic Property Location Map
Forestiere Underground Gardens, Fresno

Figure 4-19
Forestiere Underground Gardens, view south to the historic property from the north side of W. Shaw Avenue

Figure 4-20
Forestiere Underground Gardens, view south showing a simulation of the proposed W. Shaw Avenue improvements.

Application of Criteria of Adverse Effect

The Project would have No Adverse Effect on Forestiere Underground Gardens. See Table 4-13 for a detailed assessment of potential adverse effects of the Project on this historic property.

Table 4-13
Application of Criteria of Adverse Effect for Forestiere Underground Gardens

Examples of Adverse Effects, CFR 800.5(a)(2): Adverse effects on historic properties include, but are not limited to:	**Evaluation**
(i) Physical destruction of or damage to all or part of the property;	The Project would cause no direct physical destruction or damage to the historic property because there would be no construction activities on the property. The historic property is located adjacent to proposed construction activities associated with the overcrossing at W. Shaw Avenue. Improvements would be confined to the W. Shaw Avenue and N. Cornelia Avenue right-of-way; no construction or staging would encroach on this property. The Project would cause no indirect physical destruction or damage that could result from construction vibration. Building damage from construction vibration is only anticipated to occur from impact pile-driving within 25 to 50 feet of buildings or structures (Authority and FRA 2012e). While Forestiere Underground Gardens is immediately adjacent to the proposed roadway improvements at W. Shaw Avenue and N. Cornelia Avenue and within the distance that pile-driving could cause physical damage (less than 25 feet), avoidance measures would be developed that eliminate the potential for vibration impacts. Measures for avoiding vibration impacts include alternative methods of construction such as push piling or auger piling. Besides impact pile-driving, other sources of construction vibration do not generate sufficiently high vibration levels for damage to occur (Authority and FRA 2012h). Despite these avoidance measures, extra care should be taken to protect potential and known underground features and structures associated with Forestiere Underground Gardens from construction vibration effects. The majority of known underground features associated with the site are located on the western parcel (APN 510-233-03) and since no comprehensive survey of the property has been conducted, the presence of underground features on the eastern parcel (APN 510-233-04) is unknown. As a precaution, a pre-construction conditions assessment would be conducted to identify any unknown features and ensure they are protected and stabilized (as needed). The Project would cause no indirect physical destruction or damage to any historic properties along the Merced to Fresno Section as the result of operational vibration because vibration is not anticipated to exceed 0.12 PPV in/sec at any historic property within the APE. Furthermore, HST projects typically generate significantly fewer vibration impacts as compared with noise impacts. The low vibration of HST operations is because of the very inefficient propagation of vibration through the soils in the project vicinity, the low vehicle input force, and the presence of elevated structures, which provide significant

Examples of Adverse Effects, CFR 800.5(a)(2): Adverse effects on historic properties include, but are not limited to:	**Evaluation**
	attenuation of vibration levels in heavily populated areas where vibration-sensitive receptors are primarily located. In addition, buildings and structures within the construction footprint were not included in the vibration analysis because it is anticipated that they would be demolished or removed prior to construction; therefore, there would be no operational vibration effects on historic properties (Authority and FRA 2012e).
(ii) Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the SOI's standards for the treatment of historic properties (36 CFR part 68) and applicable guidelines;	The resource would not undergo any alterations.
(iii) Removal of the property from its historic location;	The resource would not be removed from its historic location.
(iv) Change of the character of the property's use or of physical features within the property's setting that contributes to its historic significance;	There would be no change to the property's use and the physical features that contribute to the significance of the property would not be altered. No work would be undertaken within the boundary of the resource, and access would be maintained so that the resource can continue to function as a historic site and tourist attraction.
(v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;	The resource's integrity would not be compromised by the introduction of visual, atmospheric or audible elements. The Project calls for the construction of an overcrossing approximately 900 feet east of the historic property. The overcrossing would slope east on a 5% grade from an approximately 8-foot-high rise at the intersection of W. Shaw Avenue and N. Cornelia Avenue and would reach grade prior to the primary access to Forestiere Underground Gardens, therefore not obstructing access. The overcrossing would also slope to the south on N. Cornelia Avenue at a 2% grade where it would reach grade approximately 450 feet from the intersection. Retaining walls would be constructed along the entire length of the eastern boundary of Forestiere Underground Gardens and along approximately 300 feet of W. Shaw Avenue. While the retaining wall and overcrossing would introduce a new visual element to the setting, the majority of the historic property's characteristic features are underground and as a result, Forestiere Underground Gardens would still be capable of conveying its significance under Criterion C. The only aspect of integrity that could be compromised is the setting. While the property does have some features visible from above ground, those features are confined to the western parcel where the retaining wall and overcrossing would have little visual impact on the views to and from the primary access to the historic property. The eastern parcel, which would be bordered on its north and east sides by retaining walls, has no aboveground features, openings, or access points that would be compromised by the construction. So although the view from the front of this historic property would be somewhat altered by

Examples of Adverse Effects, CFR 800.5(a)(2): Adverse effects on historic properties include, but are not limited to:	**Evaluation**
	the proposed overcrossing and associated retaining walls, the view would not be altered in an adverse manner because the characteristic features that make the property significant and eligible would remain unchanged. Increased noise levels as the result of operation of the Project would not impact the significant features of the property or compromise its integrity. A moderate noise impact was predicted in this area. Noise assessments were based on two types of track structure: ballast and slab. No impact was predicted for a ballast track and a moderate noise impact was predicted for the slab track. Currently the noise level is 63dBA and would rise to 70dBA if a slab track were constructed (FRA and Authority 2012e). The historic property is located approximately 1,100 feet west from the existing UPRR line and would be 900 feet from the proposed HST alignment. The property is situated in urban Fresno. While noise assessments conducted in the vicinity of the historic property predicted a moderate noise impact for a slab track, the increase in noise levels is not expected to affect the historic characteristics of the property that make it significant and eligible for the NRHP. The historic property is eligible under Criterion C for its unique construction techniques and under Criterion D for its information potential. Noise impacts as the result of the operation of the HST alignment would not compromise the property's integrity of location, design, materials, workmanship, feeling, and association. The only aspects of integrity that could be compromised are the setting and feeling, but since the building's significance is largely derived from its physical characteristics, increased noised levels would not alter the property in an adverse manner. This is because the characteristic features that make the building significant and eligible would remain unchanged. As a result, the building would still be capable of conveying its significance under Criterion C and D.
Finding:	The Project results in a finding of ***No Adverse Effect*** to Forestiere Underground Gardens.

Conditions Proposed/Mitigation Measures

Despite the finding of "no adverse effect," several measures are recommended to ensure protection of the historic property since the presence of underground features on the eastern parcel is unknown and the parcel in question is adjacent to proposed roadway improvements.

1. Conduct a Ground Penetrating Radar (GPR) Study

A GPR study is recommended for the eastern half of the property, which is adjacent to the proposed overcrossing at W. Shaw Avenue. The GPR study will be conducted on the eastern parcel prior to construction to determine the existence and extent of any underground features associated with the site that have not previously been identified. If features are identified, the findings will be mapped and used to develop a protection and stabilization plan. The findings will also be used to avoid adverse vibration

effects. The GPR study will be undertaken in consultation with the SHPO, City of Fresno, the consulting parties, and the property owner(s).

2. Avoid Adverse Vibration Effects

It is recommended that measures be developed and employed to avoid adverse vibration effects caused by construction activities. Vibration from impact pile-driving during construction could potentially cause the physical destruction, damage, or alteration of portions of Forestiere Underground Gardens if the pile-driving is within 25 to 50 feet of the resource. Because this impact pile-driving could cause adverse effects, alternative construction methods causing less than 0.12 PPV in/sec measured at the receptor will be developed for construction activities near the resource. The development of alternative construction methods near Forestiere Underground Gardens will avoid adverse vibration effects. Preconstruction surveys conducted at locations within 50 feet of piling will document existing condition of contributing buildings, structures, or landscape features.

3. Develop Protection and Stabilization Measures

Development of protection and stabilization measures is recommended as a treatment to avoid adverse effects caused by construction activities within close proximity to the resource. These measures will be developed in consultation with the landowner(s), as well as the SHPO and the MOA signatories, as required by the PA. Such measures will include, but will not be limited to, vibration monitoring of construction in the vicinity of the historic property; cordoning off the historic property from construction activities; shielding resources from dust and debris; and stabilizing buildings, structures, or landscape features adjacent to construction, as appropriate.

4. Update NRHP/CRHR Nomination

Preparation and submission of an updated NRHP/CRHR nomination is recommended. The original form, written in 1975, will be updated to include supplemental photographic and cartographic documentation as well as background history. The update will also clearly identify the boundaries of the resource and all contributing and noncontributing features. Current photographs of the property and any other documentation of the property needed for the nomination will be acquired prior to the start of project construction. The nomination may also use other current and/or historic images prepared as part of other mitigation activities. Copies of the documentation will be offered to the appropriate local governments, agencies, historical societies, and libraries following consultation with and approval from the SHPO, the Authority, and the City of Fresno. The electronic copy of the documentation may also be placed on an agency or organization's web site.

5. Plan Repair of Inadvertent Damage

Preparation of a plan for repair of inadvertent damage is recommended. The plan will be developed prior to construction and will state that any damage to the historic property resulting from construction activities associated with the Project will be repaired in accordance with the SOI's Standards for Rehabilitation. Photographs documenting the condition of the historic property will be taken prior to the start of construction to establish the baseline condition for assessing damage. A copy of this photographic documentation will be provided to the property owner(s). Prior to implementation, plans for any repairs to the historic property will be submitted to SHPO for review and comment.

6. Conduct Monitoring in Proximity to the Historic Property

Monitoring of construction activities is recommended at the north and eastern boundaries of Forestiere Underground Gardens. Monitoring is recommended as an avoidance measure based on the lack of documentary evidence of the underground conditions on the eastern parcel of the property. All of the underground features identified as contributing resources in the NRHP nomination are located on the western parcel. To prevent any unknown historic features from being damaged during construction

activities, monitoring is recommended. The Authority will retain the services of a qualified monitor who will be present during all ground-disturbing construction activities adjacent to the resource. The process for monitoring will be specified in detail in the BETP, and was developed in coordination with all of the project's consulting parties.

All avoidance, minimization, and mitigation measures proposed for this historic property will be developed in consultation with the consulting parties. Comments received will be used to develop the BETP and the MOA.

4.4.7 Roeding Park

APN: 450-020-08
890 West Belmont Avenue, Fresno

Property Description

Roeding Park is significant under Criterion A in the area of community planning and development for its association with the pattern of events that made a significant contribution to the development of municipal parks in California in the early 20th century. The park (including the Fresno Chaffee Zoo) followed national and state trends in municipal park development from early picturesque pleasure grounds to recreation-focused institutions with multiple attractions in the 20th century. Roeding Park is also eligible for listing in the NRHP under Criterion C (Design/Construction) as an excellent example of the early 20th century municipal park typology, which is defined by the evolution of parks from urban pleasure grounds to recreation-centered facilities in the early to mid-20th century.

The period of significance for the district spans 1903-1962, beginning the year construction began on the park, and ends in 1962, the year Rotary Storyland was constructed. There are 29 contributing resources within Roeding Park. The boundaries of Roeding Park are defined by the relative extent of the historic park boundary, which is bounded by N. Motel Avenue on the east, W. Belmont Avenue on the south (excluding the Belmont Avenue Circle), SR 99 and N. West Avenue on the west, and W. Olive Avenue on the north. Roeding Park is located immediately adjacent to the proposed overcrossing on W. Olive Avenue to the north, the proposed main line of the HST along Golden State Boulevard to the east, and the proposed overcrossing on W. Belmont Avenue to the south (see Figures 4-19 through 4-23).

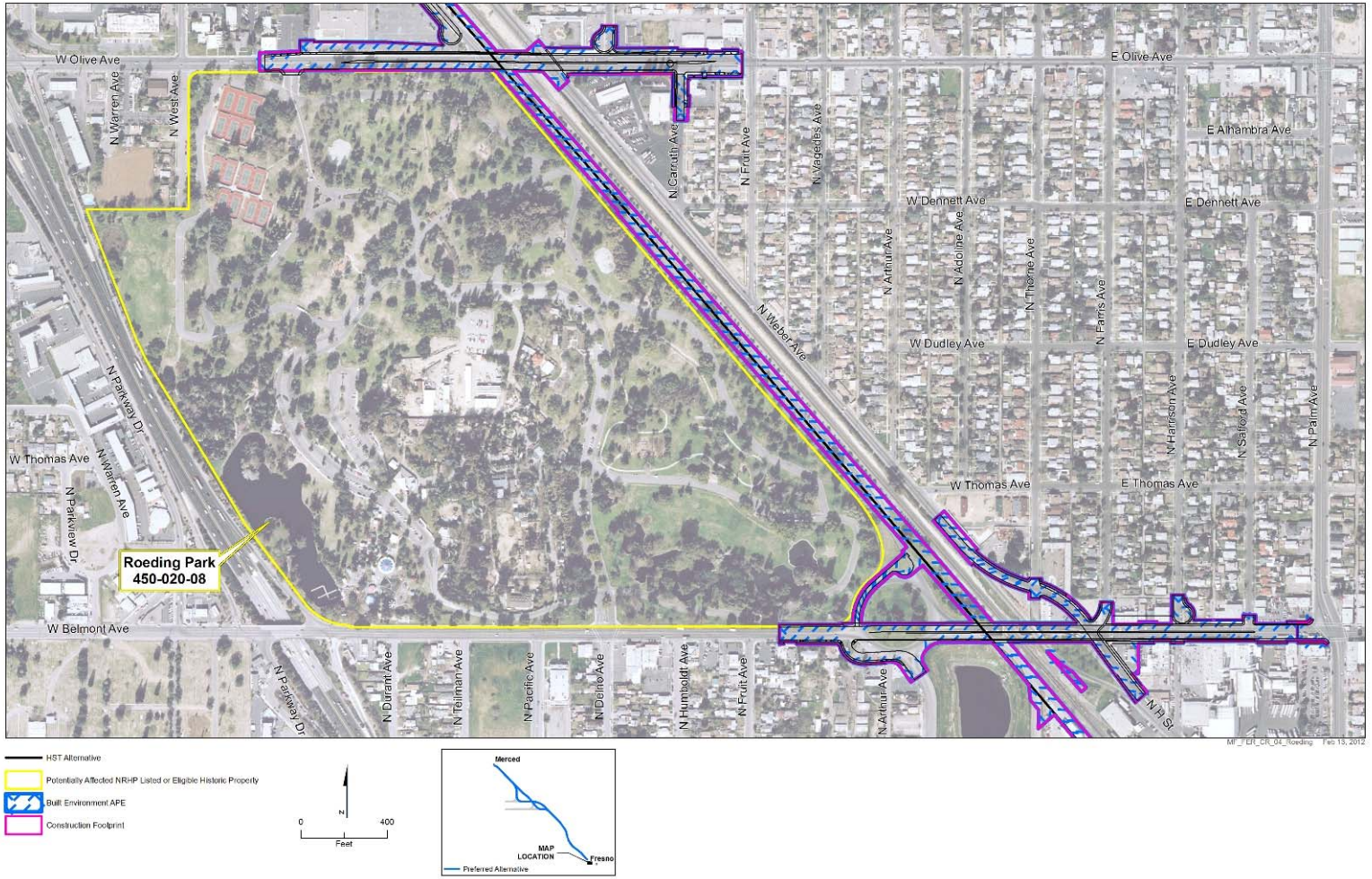

Figure 4-21
Historic Property Location Map
Roeding Park, Fresno

Figure 4-22
Roeding Park, view north from the interior of the park to W. Olive Avenue

Figure 4-23
Roeding Park, view north from the interior of the park showing a simulation of the Olive Avenue overcrossing

Figure 4-24
Roeding Park, view east from the interior of the park to Golden State Boulevard

Figure 4-25
Roeding Park, view east from the interior of the park showing a simulation of the proposed HST alignment

Application of Criteria of Adverse Effect

The Project would have an Adverse Effect on Roeding Park in the City of Fresno. See Table 4-14 for a detailed assessment of potential adverse effects of the Project on this historic property.

Table 4-14
Application of Criteria of Adverse Effect for Roeding Park

Examples of Adverse Effects, CFR 800.5(a)(2): Adverse effects on historic properties include, but are not limited to:	**Evaluation**
(i) Physical destruction of or damage to all or part of the property;	The Project would cause no direct physical destruction or damage to the resource because there would be no construction activities on the property. The historic property is located adjacent to anticipated construction activities associated with the HST alignment on the east, the W. Olive Avenue overcrossing to the north, and the W. Belmont Avenue overcrossing to the south. Improvements would be confined to the W. Olive Avenue, N. Golden State Blvd., and W. Belmont Avenue rights-of-way. No construction or staging associated with the above mentioned improvements would encroach on this property. The Project would cause no indirect physical destruction or damage that could result from construction vibration. Building damage from construction vibration is only anticipated to occur from impact pile-driving within 25 to 50 feet of buildings or structures (Authority and FRA 2012e). Only one contributing structure, the Japanese-American World War II Memorial (near the eastern boundary along N. Golden State Blvd) is located within 25 feet of the proposed construction. Due to the strength of the material, a granite monument has a higher threshold for vibration than buildings extremely susceptible to vibration damage. The FTA damage criterion for construction activity for the granite monument (0.3 PPV inch/second) is a higher threshold than the damage criterion for buildings extremely susceptible to vibration damage (0.12 PPV inch/second) and therefore, the potential for damage is less. While the potential for vibration damage at this resource is lessened, the potential may still exist for vibration impacts from construction activities within 25 feet, such as pile-driving. As a result, avoidance measures would be developed that eliminate the potential for vibration impacts. Measures for avoiding vibration impacts include alternative methods of construction to pile-driving such as push piling or auger piling. Besides impact pile-driving, other sources of construction vibration do not generate sufficiently high vibration levels for damage to occur (Authority and FRA 2012e). The Project will cause no indirect physical destruction or damage to any historic properties along the Merced to Fresno Section as the result of operational vibration because vibration is not anticipated to exceed 0.12 PPV in/sec at any historic property within the APE. Furthermore, HST projects typically generate significantly fewer vibration impacts as compared with noise impacts. The low vibration of HST operations is because of the very inefficient propagation of

Examples of Adverse Effects, CFR 800.5(a)(2): Adverse effects on historic properties include, but are not limited to:	**Evaluation**
	vibration through the soils in the project vicinity, the low vehicle input force, and the presence of elevated structures, which provide significant attenuation of vibration levels in heavily populated areas where vibration-sensitive receptors are primarily located. In addition, buildings and structures within the construction footprint were not included in the vibration analysis because it is anticipated that they would be demolished or removed prior to construction; therefore, there would be no operational vibration effects on historic properties (Authority and FRA 2012e).
(ii) Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the SOI's standards for the treatment of historic properties (36 CFR part 68) and applicable guidelines;	The resource would not undergo any alterations.
(iii) Removal of the property from its historic location;	The resource would not be removed from its historic location.
(iv) Change of the character of the property's use or of physical features within the property's setting that contributes to its historic significance;	There would be no change to the property's use and the physical features that contribute to the significance of the property would not be altered.
(v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;	The Project would introduce visual elements that diminish the integrity of the property's historic features. While an existing at-grade UPRR line is located approximately 100 feet east of the park, the proposed at-grade and retained cut railroad line would be constructed immediately adjacent to the eastern boundary of this historic property. The new rail line would be situated on an at-grade track for approximately 975 feet of the northeast corner of the park, and would transition to a retained cut that descends into an approximately 27-foot cut beneath the original grade at the southeastern corner of Roeding Park. A chain-link fence approximately 6-8 feet in height would be constructed between the alignment and the park. Catenary structures would also be constructed along the railroad right-of-way, introducing a new visual element. Immediately north of the park, an overcrossing would be constructed at W. Olive Avenue to carry traffic over the rail line. The overcrossing would slope on a 6.94% grade from approximately 40 feet high (over the rail line) down to grade near the W. Olive Avenue entrance to Roeding Park. Immediately south of the park, a second overcrossing would be constructed at Belmont Avenue. The overpass would slope on a 5% grade from approximately 40 feet high down to grade just east of N. Fruit Avenue. Construction of the alignment and the roadway overcrossings would introduce new and substantial visual elements that would compromise the integrity of the park. The setting of the east side of the park is characterized by grassy lawns, groves of young and mature trees, picnic areas, winding pedestrian and vehicular pathways, the Pine

Examples of Adverse Effects, CFR 800.5(a)(2): Adverse effects on historic properties include, but are not limited to:	**Evaluation**
	Grove and Picnic Shelter, the Eucalyptus Grove, the Folk-Dance Platform, the Japanese-American World War II Memorial, and the Palm Point Grove and Picnic Shelter. The latter four locations are all contributing resources to Roeding Park. Though there are groves of trees throughout the park that buffer the view somewhat, there are still open views to and from the park. With the introduction of the railroad line and overcrossings, these open views would be eliminated. The proximity of the proposed rail line would not be consistent with the historic setting and would diminish the historic integrity of Roeding Park. Increased noise levels as the result of operation of the Project would cause an adverse effect on the historic property because increased noise would diminish the integrity of the property's historic features that make it significant and eligible for the NRHP. Construction and operational noise have the potential to cause adverse effects to historic property types that are sensitive to noise including (but not limited to) residences, parks, libraries, museums, and schools. This resource is significant under Criterion A for its association with the development of municipal parks in California and under Criterion C as a good example of a 20th century municipal park. The north, east, and south sides of the park are dominated by a pastoral setting made up of several bucolic tree groves and passive recreational spots that are contributing features and for which quiet settings are inherent in their function. These features include the Japanese-American World War II Memorial, the Picnic Grove and Picnic Shelter, the Palm Point Grove and Picnic Shelter, Cedar Grove, Eucalyptus Grove, and four ponds. This area is also occupied with contributing landscape areas and circulation areas. Noise assessments conducted in the vicinity of the historic property predicted a severe noise impact. Noise assessments were based on two types of track structure: ballast and slab. Currently the noise level at the park is 55dBA and is expected to increase to 69dBA if a ballasted track is constructed and to 72dBA if a slab track is constructed. The noise increase at this location would be caused by operation of the HST and although episodic, the noise would occur more frequently than with the existing freight traffic on the UPRR. The difference in noise levels between the two track structures would be negligible, but noise would still result in severe impacts. An increase in the noise levels in the pastoral setting of the passive recreational portion of the park, particularly at those inherently quiet and contributing sites mentioned above, would not be consistent with the historic setting, feeling, and association and would diminish the historic integrity of Roeding Park and compromise its eligibility under Criterion A.
Finding:	The Project results in a finding of ***Adverse Effect*** to Roeding Park.

Conditions Proposed/Mitigation Measures

1. Avoid Adverse Vibration Effects

It is recommended that measures be developed and employed to avoid vibration effects caused by construction activities. Vibration from impact pile-driving during construction could cause the physical destruction, damage, or alteration of portions of this historic property if the pile-driving is within 25 to 50 feet of the resource. Because this impact pile-driving could cause adverse effects, alternative construction methods causing less than 0.12 PPV in/sec measured at the receptor will be developed for construction activities adjacent to Roeding Park. The development of alternative construction methods at near Roeding Park will avoid adverse effects. Preconstruction surveys conducted at locations within 50 feet of piling will document the existing condition of contributing resources within Roeding Park in case there is an issue during or after construction.

2. Avoid Adverse Noise Effects

It is recommended that measures be employed that avoid adverse effects caused by construction and operational noise of the Project. As a precaution against construction noise impacts, the Project developed measures to avoid adverse effects resulting from construction noises such as impact pile-driving, jack-hammering, and truck loading and operations. These measures include such alternative measures as low-noise emission equipment and noise-deadening for trucks. As for operational noise, the historic property will be treated in consultation with the City of Fresno. Preliminary project design options, including noise barriers, have been developed to help reduce noise impacts and follow FRA methodologies for noise abatement. These options will be further developed during project design, discussed in detail in the BETP, and implemented during construction.

3. Prepare and Submit Historic American Buildings Survey (HABS)/Historic American Landscapes Survey (HALS) Documentation

Preparation and submission of HABS/HALS documentation is recommended as a treatment to mitigate adverse effects caused by visual intrusions and operational noise of the Project. Roeding Park will be documented in compliance with the HABS/HAER/HALS programs. Consultation with the SHPO, the Western Regional Office of the NPS (Oakland, California), and the consulting parties will be undertaken as to the appropriate level of documentation.

Prior to the start of construction, photographs will be taken of Roeding Park showing it in context, as well as details of character-defining features. The photographs will be processed for archival permanence in accordance with HABS/HALS photographic specifications. Each view will be fully captioned and, if necessary, perspective corrected. Oblique aerial photography will be considered as a photographic recordation option in these coordination efforts.

The recordation will follow the NPS HABS/HALS guidelines. It is anticipated that the recordation of this historic property will include archival and digital reproduction of current and historic images, a historical narrative, and measured drawings, if available. Copies of the documentation will be offered to the appropriate local governments, agencies, historical societies, and libraries following consultation with and approval from the SHPO, the Authority, and the City of Fresno. The electronic copy of the report may also be placed on an agency or organization's web site.

4. Prepare Interpretive Exhibits

Preparation of interpretive exhibits is recommended as a treatment to help mitigate adverse effects caused by visual intrusions and operational noise of the Project. Interpretive exhibits will utilize images, narrative history, drawings, or other material produced for other mitigations, including the HABS/HALS documentation and the NRHP/CRHR nomination. The interpretive exhibits may be in the form of, but are not limited to, interpretive display panels and/or printed material for dissemination to the public. The

interpretive exhibits may be installed at the park itself, in local libraries, at local historical societies, or in public buildings.

5. Coordinate with Consulting Parties

All avoidance, minimization, and mitigation measures proposed for this historic property will be developed in consultation with the consulting parties. Comments received will be used to develop the BETP and the MOA.

4.4.8 Weber Avenue Overcrossing (Bridge #42C0071)

No APN
Weber Avenue at Thorne Avenue, Fresno

Property Description

The Weber Avenue Overcrossing (Bridge #42C0071), located just east of the Belmont Avenue Underpass, was previously evaluated by Andrew Hope, Principal Architectural Historian, Caltrans in May 2004. That evaluation found the bridge eligible for the NRHP at the state level of significance under Criterion C as an early example of the use of pre-stressed concrete, and the first vehicle bridge in California to use this construction technique. The SHPO concurred with the evaluation on December 7, 2005. The two-lane bridge has a 22-foot roadway, with a 6-foot sidewalk on the south side and concrete window railings. There are a total of 10 concrete T-beams, each 36 inches deep. The beams are 36 inches wide at the top and 16 inches wide at the bottom, with 6-inch thick vertical webs. The character-defining features are limited to the bridge structure, as the abutments are integral with the Belmont Subway. Paneled retaining walls and railings shown in the photograph are also part of the Belmont Subway. The period of significance for the Weber Avenue Overcrossing is 1953, the year of construction. The resource is located within the construction footprint for the Project (see Figure 4-26).

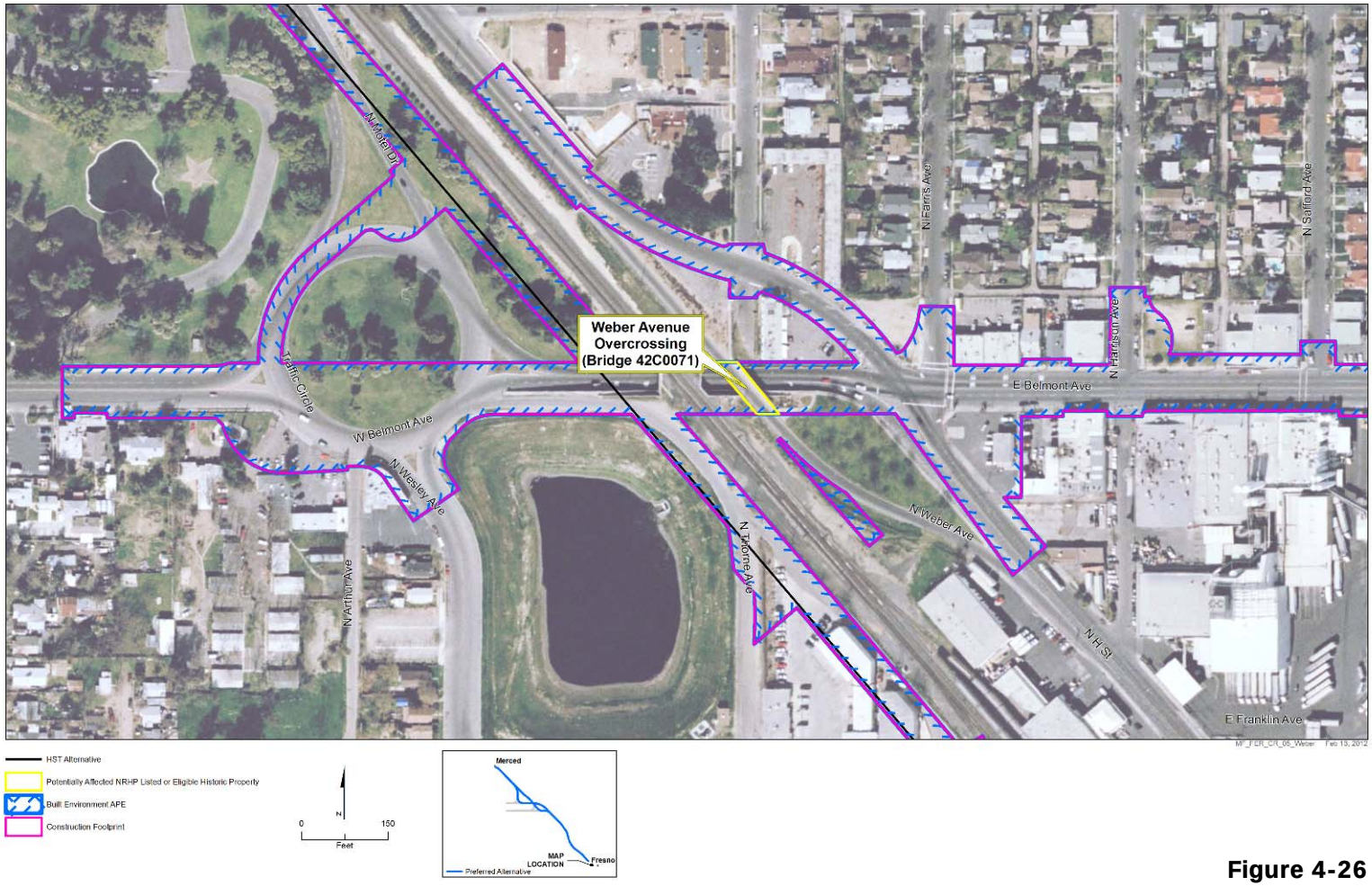

Figure 4-26
Historic Property Location Map
Weber Avenue Overcrossing, Fresno

Application of Criteria of Adverse Effect

The Project would cause an Adverse Effect to the Weber Avenue Overcrossing by removing it. See Table 4-15 for a detailed assessment of the potential adverse effect of the Project on this historic property.

Table 4-15
Application of Criteria of Adverse Effect for Weber Avenue Overcrossing

Examples of Adverse Effects, CFR 800.5(a)(2): Adverse effects on historic properties include, but are not limited to:	**Evaluation**
(i) Physical destruction of or damage to all or part of the property;	Construction of the Project would cause an adverse effect to the Weber Avenue Overcrossing because construction activities would result in the destruction of the historic property. The historic property would be directly impacted by the proposed construction of the Belmont Avenue Overcrossing. As part of these improvements, the Weber Avenue Overcrossing would be removed entirely, compromising its integrity of location, design, materials, workmanship, feeling, and association and as a result, would make it incapable of conveying its significance under Criterion C. The Project would cause no indirect physical destruction or damage to any historic properties along the Merced to Fresno Section as the result of operational vibration because vibration is not anticipated to exceed 0.12 PPV in/sec at any historic property within the APE. Furthermore, HST projects typically generate significantly fewer vibration impacts as compared with noise impacts. The low vibration of HST operations is because of the very inefficient propagation of vibration through the soils in the project vicinity, the low vehicle input force, and the presence of elevated structures, which provide significant attenuation of vibration levels in heavily populated areas where vibration-sensitive receptors are primarily located. In addition, buildings and structures within the construction footprint were not included in the vibration analysis because it is anticipated that they would be demolished or removed prior to construction; therefore, there would be no operational vibration effects on historic properties (Authority and FRA 2012e).
(ii) Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the SOI's standards for the treatment of historic properties (36 CFR part 68) and applicable guidelines;	The resource would undergo alterations that are not consistent with the SOI's standards for the treatment of historic properties.
(iii) Removal of the property from its historic location;	This resource would be destroyed.
(iv) Change of the character of the property's use or of physical features within the property's setting that contributes to its historic significance;	There would be a significant change to the physical features that contribute to the significance of the historic property.
(v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;	This resource would be destroyed.

Examples of Adverse Effects, CFR 800.5(a)(2): Adverse effects on historic properties include, but are not limited to:	**Evaluation**
Finding:	The Project results in a finding of ***Adverse Effect*** to the Weber Avenue Overcrossing.

Mitigation Measures

1. Prepare and Submit Historic American Engineering Record (HAER) Documentation

Preparation and submission of HAER documentation is recommended as a treatment to mitigate adverse effects caused by destruction of the Weber Avenue Overcrossing. The historic property will be documented in compliance with the HAER program. Consultation with the SHPO, Western Regional Office of the NPS (Oakland, California), and the consulting parties will be undertaken.

Prior to the start of construction, photographs will be taken of the Weber Avenue Overcrossing showing it in context, as well as details of character-defining features. The photographs will be processed for archival permanence in accordance with HAER photographic specifications. Each view will be fully captioned and, if necessary, perspective corrected. Oblique aerial photography will be considered as a photographic recordation option in these coordination efforts.

The recordation will follow the NPS HAER guidelines and consultation direction from NPS. It is anticipated that the recordation of this historic property will include archival and digital reproduction of current and historic images and a historical narrative. Preparation of, or reproduction of, existing measured drawings may be included depending upon the level of HAER recordation negotiated with NPS. Copies of the documentation will be offered to the appropriate local governments, agencies, historical societies, and libraries following consultation with and approval from the SHPO, the Authority, and the City of Fresno. The electronic copy of the documentation may also be placed on an agency or organization's web site.

2. Prepare Interpretive Exhibits

Preparation of interpretive exhibits is recommended as a treatment to help mitigate adverse effects caused by destruction of the Weber Avenue Overcrossing. Interpretive exhibits will utilize images, narrative history, drawings, or other material produced for other mitigations, including the HAER documentation and NRHP/CRHR nomination. The interpretive exhibits may be in the form of, but are not limited to, interpretive display panels and/or printed materials for dissemination to the public. The interpretive exhibits may be installed at local libraries, historical societies, or public buildings.

It is also recommended that an informative permanent metal plaque or roadside marker be installed at the site of the historic property or at nearby public locations. The plaque will provide a brief history of the Weber Avenue Overcrossing, its engineering/architectural features and characteristics, and the reasons for and date of its demolition.

3. Coordinate with Consulting Parties

All avoidance, minimization, and mitigation measures proposed for this historic property will be developed in consultation with the consulting parties. Comments received will be used to develop the BETP and the MOA.

4.4.8 Belmont Avenue Subway and Traffic Circle

No APN
Belmont Avenue at Golden State Blvd, Fresno

Property Description

The Belmont Avenue Subway and Traffic Circle consists of an underpass, railroad bridge, and traffic circle located southeast of Roeding Park in Fresno. The subway is a 1932 reinforced concrete and steel girder railroad bridge with a span of 42 feet. The 2004 Caltrans bridge survey rated the bridge a Category 4 ("Historical Significance Not Determined"), as railroad bridges were not formally evaluated as part of the Caltrans inventory. The subway and its associated 200–foot-radius traffic circle roadway approach is the first configuration of this type in California to address a key railroad grade separation along former SR 99, and is one of the earliest examples of traffic circles in the West. The Belmont Avenue Subway and Traffic Circle meets NRHP Criteria C at the local level of significance for being one of the earliest examples of this type of traffic feature in the West and for its association with then City engineer Jean L. Vincenz. Physical features that contribute to the significance of the subway include the balustrade with lancet openings, the Southern Pacific Company emblem, concrete retaining walls and textured panel surfaces, and pedestrian tunnel. Contributing features of the traffic circle include the size and scale with grass-filled center adorned with mature coniferous and palm trees and the one lane of traffic that travels around the perimeter. The boundary includes those physical features that convey the significance of the resource. The period of significance encompasses the year that the historic property was constructed, 1932. The resource is located within the construction footprint of the Project (see Figures 4-27 through 4-31).

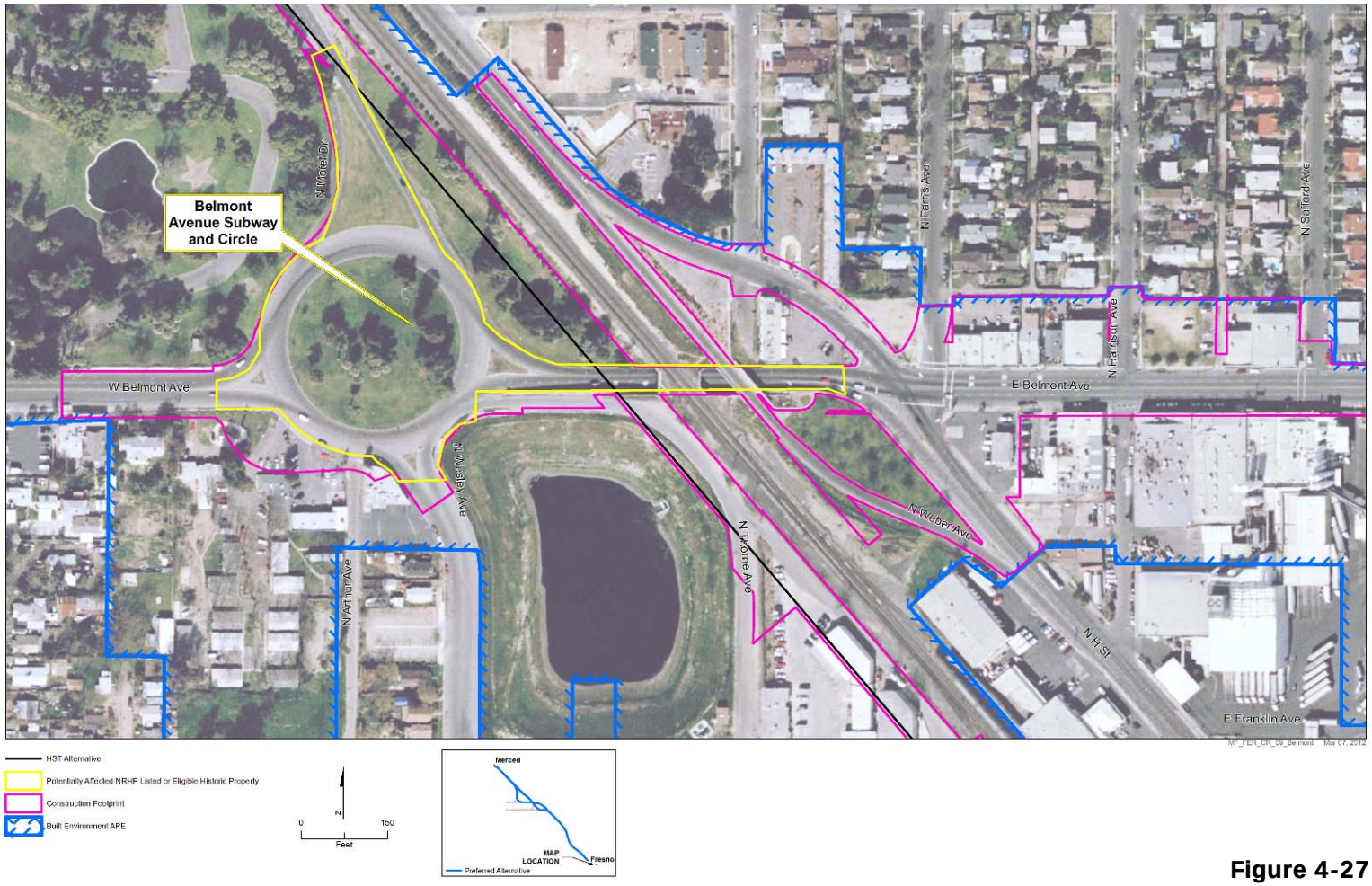

Figure 4-27
Historic Property Location Map
Belmont Avenue Subway and Traffic Circle, Fresno

Figure 4-28
Belmont Avenue Subway and Traffic Circle, view south from Golden State Blvd showing the circle and the subway beyond

Figure 4-29
Belmont Avenue Subway and Traffic Circle, view south from Golden State Blvd showing a simulation of the proposed Belmont Avenue overpass

Figure 4-30
Belmont Avenue Subway and Traffic Circle, view north from N. Wesley Avenue showing the subway

Figure 4-31
Belmont Avenue Subway and Traffic Circle, view north from N. Wesley Avenue showing a simulation of the proposed Belmont Avenue overpass

Application of Criteria of Adverse Effect

The Project would cause an adverse effect to the Belmont Avenue Subway and Traffic Circle by removing it. See Table 4-16 for a detailed assessment of the potential adverse effect of the Project on this historic property.

Table 4-16
Application of Criteria of Adverse Effect for Belmont Avenue Subway and Traffic Circle

Examples of Adverse Effects, CFR 800.5(a)(2): Adverse effects on historic properties include, but are not limited to:	**Evaluation**
(i) Physical destruction of or damage to all or part of the property;	Construction of the Project would cause the physical destruction of the Belmont Avenue Subway and Traffic Circle. The historic property would be directly impacted by the proposed construction of the alignment and roadway improvements associated with the Belmont Avenue overcrossing. As part of these improvements, the Belmont Avenue Subway and Traffic Circle would be removed entirely, compromising its integrity of location, design, materials, workmanship, feeling, and association and as a result, would make it incapable of conveying its significance under Criterion C. The Project would cause no indirect physical destruction or damage to any historic properties along the Merced to Fresno Section as the result of operational vibration because vibration is not anticipated to exceed 0.12 PPV in/sec at any historic property within the APE. Furthermore, HST projects typically generate significantly fewer vibration impacts as compared with noise impacts. The low vibration of HST operations is because of the very inefficient propagation of vibration through the soils in the project vicinity, the low vehicle input force, and the presence of elevated structures, which provide significant attenuation of vibration levels in heavily populated areas where vibration-sensitive receptors are primarily located. In addition, buildings and structures within the construction footprint were not included in the vibration analysis because it is anticipated that they would be demolished or removed prior to construction; therefore, there would be no operational vibration effects on historic properties (Authority and FRA 2012e).
(ii) Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the SOI's standards for the treatment of historic properties (36 CFR part 68) and applicable guidelines;	The resource would undergo alterations that are not consistent with the SOI's standards for the treatment of historic properties.
(iii) Removal of the property from its historic location;	This resource would be destroyed.
(iv) Change of the character of the property's use or of physical features within the property's setting that contributes to its historic significance;	There would be a significant change to the physical features that contribute to the significance of the historic property.
(v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the	This resource would be destroyed.

Examples of Adverse Effects, CFR 800.5(a)(2): Adverse effects on historic properties include, but are not limited to:	**Evaluation**
property's significant historic features;	
(vi) Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and	The resource would not be neglected as a result of this project.
(vii) Transfer, lease, or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.	N/A
Finding:	The Project results in a finding of ***Adverse Effect*** to the Belmont Avenue Subway and Traffic Circle.

Mitigation Measures

1. Prepare and Submit Historic American Engineering Record (HAER) Documentation

Preparation and submission of HAER documentation is recommended as a treatment to mitigate adverse effects caused by destruction of the historic property. The historic property will be documented in compliance with the HAER program. Consultation with the SHPO, the Western Regional Office of the NPS (Oakland, California), and the consulting parties will be undertaken.

Prior to the start of construction, photographs will be taken of the Belmont Avenue Subway and Traffic Circle showing it in context, as well as details of character-defining features. The photographs will be processed for archival permanence in accordance with HAER photographic specifications. Each view will be fully captioned and, if necessary, perspective corrected. Oblique aerial photography will be considered as a photographic recordation option in these coordination efforts.

The recordation will follow the NPS HAER guidelines. It is anticipated that the recordation of this historic property will include archival and digital reproduction of current and historic images, a historical narrative, and measures drawings. Copies of the documentation will be offered to the appropriate local governments, agencies, historical societies, and libraries following consultation with and approval from the SHPO, the Authority, and the City of Fresno. The electronic copy of the documentation may also be placed on an agency or organization's web site.

2. Prepare Interpretive Exhibits

Preparation of interpretive exhibits is recommended as a treatment to mitigate adverse effects caused by destruction of the historic property. Interpretive exhibits will utilize images, narrative history, drawings, or other material produced for other mitigations, including the HAER documentation and NRHP/CRHR nomination. The interpretive exhibits may be in the form of, but are not limited to, interpretive display panels and/or printed material for dissemination to the public. The interpretive exhibits may be installed at local libraries, historical societies, or public buildings.

It is also recommended that an informative permanent metal plaque be installed at the site of the Belmont Avenue Subway and Traffic Circle or at nearby public locations. The plaque will provide a brief history of the property, its engineering/architectural features and characteristics, and the reasons for and date of its demolition.

3. Coordinate with Consulting Parties

All avoidance, minimization, and mitigation measures proposed for this historic property will be developed in consultation with the consulting parties. Comments received will be used to develop the BETP and the MOA.

5.0 Conclusion

This Findings of Effect (FOE) report was prepared for the Merced to Fresno Section of the California High-Speed Train (HST) Project to assist the project proponent, the California High-Speed Rail Authority (Authority), and the lead federal agency, the Federal Railroad Administration (FRA), to comply with Section 106 of the National Historic Preservation Act (NHPA), and the implementing regulations of the Advisory Council on Historic Preservation (ACHP), as these pertain to federally funded undertakings and their impacts on historic properties.

There are 15 historic properties within the APE. There are a total of four significant archaeological resources located within or adjacent to the archaeological APE for the Project. There are a total of nine significant built environment historic properties within the built environment APE for the Project.

This FOE concludes that the Project would have an Adverse Effect on 8 of the 15 historic properties. Thus the Project would have an **Adverse Effect** under Section 106.

6.0 References

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